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NO. 4



THE PAN AMERICAN HIGHWAY
SEAWAY ACROSS TOP OF THE WORLD
ALASKA, SPRINGBOARD OF ATTACK

TRINIDAD—THE CROSSROADS OF THE WORLD
DISTRIBUTION OF NATIONAL INCOME AND
PURCHASING POWER
BATTLING NATURE'S BLITZKRIEG

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The British standard of spelling is adopted substantially as used by the Dominion Government and taught in most Canadian schools, the precise authority being the Oxford Dictionary as edited in 1936.

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Figure of Victory at the Head Office,
Bank of Montreal

till Victory comes . . .

Each to his task . . . to work as we have never worked before. And in like manner to save and to lend . . . by economy in our daily living, by buying war secu-

rities. Till Victory comes, let us save with determination and work with all our energy of body and mind . . . not *wishing* for peace, but *labouring* for it.

B A N K O F M O N T R E A L

THE PAN AMERICAN HIGHWAY

by HERBERT C. LANKS

TO most people the Pan American Highway means a continuous road from the tip of North America to the tip of South America, passing through the various national capitals *en route*. Naturally this is only literally possible in the narrow part of Central America where the various capitals are strung out in a comparatively regular sequence. Because of the width of the continent in both North and South America it is not remotely possible to link the capitals directly. Hence we must think of a *Pan American Highway System*, that is a trunk line with more or less lateral branches. This is the designation which is coming into use to-day.

Within the limits of the United States, Canada, and Alaska, no exact route has been recognized officially as the Pan American Highway System. Although various roads connect Washington and Ottawa no certain one has been specified as being a part of this system. The Alaskan International Highway Commission has more or less decided upon a 2,250-mile route with alternate sections from the United States through Canada and to Alaska. The war interrupted the final location of this Canadian-Alaskan road, and, meanwhile, a temporary military highway to Alaska has been rushed to completion which follows only in part the route of the proposed peace-time highway.

South of the Rio Grande, however, the course of the Pan American Highway System is fairly definitely determined. The 1,500-mile length of the route through Mexico has been virtually decided by the government of that country alone except at the border approaches. It is practically all surveyed and most of it is completed or nearing completion. The approximately 1,500-mile stretch of the Pan American

Highway through the Central American republics to Panama had been laid out by a Reconnaissance Survey in 1934 with the help of United States engineers. South of Panama, through most of South America, the course of the Pan American Highway System has been laid out by international agreement chiefly through the Pan American Highway Conferences held every three years, the last one of which was held in Mexico City in September 1941, and through the agency of an international autonomous body called The Pan American Highway Confederation. The latter body, with headquarters in the Pan American Building, represents various organizations throughout the Americas interested in the development of the Pan American Highway System. It publishes maps showing the route of the Pan American Highway throughout all the Latin American countries.

The official map of the Pan American Highway System shows the highway beginning at the United States-Mexican border at Laredo, Texas, and running down

The Pan American Highway passes through the mountain village of San Marcos in Guatemala on the way from the Mexican border to Guatemala City, capital of the country.





Most of Guatemala's famous highway system has been built by hand labour.



Every male in Guatemala is required by law to give two weeks' service or its equivalent on the country's highways.





Dabeiba, Colombia,—last village on the northernmost extremity of the Pan American Highway in South America.

Colombia: the strange woolly-leaved growth found only on the cold desolate paramo on top of the Andes. It gives an uncanny sensation, as if it were the vegetation of another planet out of which one might expect a strange monster to step at any minute. Perhaps the dizziness resulting from this high elevation (13,000 feet) adds to the hallucination.

through the central part of Mexico to the capital, Mexico City. This link to Mexico's capital has been travelled by thousands of North American tourists from the United States and Canada for the past ten years regardless of the fact that it was only officially opened in 1936. Below Mexico City the route is only completed part way although it is laid out almost to the Guatemala border and it gradually edges over toward the western side of the country until it reaches the isthmus. From here on down to Guatemala, and all the way through the Central American republics, it follows a more or less continuous line down the west side connecting the capitals of the latter countries *en*

route South of Panama exists the so-called "Missing Link" between Panama and Colombia which has never been surveyed. But from northern Colombia and beyond the road has been quite definitely established.

In South America the route of the Pan American Highway System runs down the west coast taking in the capitals of Colombia, Ecuador, and Peru successively. A branch called the Simon Bolivar Highway runs northeastward from Bogota to Caracas, capital of Venezuela. South of Lima the Highway divides, one branch going directly to Buenos Aires through La Paz, capital of Bolivia by a diagonal road across the continent; the other branch



The Tamasulapas Bridge on the Pan American Highway in Guatemala, gift of the American Government for the purpose of encouraging the early completion of the highway.



Entrance to Pamplona, the first town of high altitude in Colombia that one encounters after leaving Cucuta near the Venezuelan border.



The little village of Tangua in southern Colombia as seen from the highway above.

running southward to Santiago, capital of Chile, and from thence directly eastward across the continent to Buenos Aires, capital of Argentina. From Buenos Aires a branch runs northward to Rio de Janeiro through Montevideo, capital of Uruguay. This leaves out of consideration a possible road running the two thousand miles south of Buenos Aires to the tip of the continent where Magallanes, the southmost city of the world, is situated on the Strait of Magellan.

Some idea of the distances involved can be obtained from the following rough approximations. It is something over ten thousand miles overland from Washington, D.C., to Buenos Aires. Not quite half of this reaches the border of Panama and South America, while over one-half of this distance is included in the rest of the way to Buenos Aires. It is two thousand miles from Washington, D.C., to the Mexican border, another three thousand miles to Panama, and from Panama it is about fifty-five hundred miles to Buenos Aires. From Buenos Aires northward to Rio de Janeiro would make another two thousand miles, and it is nearly the same distance southward to the tip of the continent at Magallanes on the Strait of Magellan.

Is it possible to make a continuous trip from the United States through North, Central, and South America by finished highway at present? The answer is that this is not yet entirely possible by land because of certain impassable gaps in the route in southern Mexico and in Central America and over the so-called "Missing Link" between Panama and Colombia, which has not yet even been surveyed. Once arriving on the South American system of highways in northern Colombia, however, it is possible to drive the length of South America in a continuous trip except for short water ferries across the Gulf of Guayaquil in Ecuador and the River Plate from Buenos Aires to Montevideo. But all the capitals of South America can be reached by highway with the exception of Asunción, Paraguay. It is also possible to drive down to the tip of the South American continent at the Strait of Magellan. Various persons, including the writer, have made the trip overland by Pan American Highway with, of course, certain detours by water necessary at the present time.

That part of the Pan American Highway from the Texas border at Laredo to Mexico City is quite well known since it is used by as many as one hundred thou-



sand tourists a year. The trip over this highway to Montezuma's former capital gives one a fair sample in miniature of the entire Pan American Highway route. It passes through a great diversity of terrain and climate, arid desert country, tropical rain forest, and alpine scenery. It is paved throughout and is considered one of the greatest examples of highway engineering in the world. It climbs abruptly from sea-level to the eight thousand-foot plateau of central Mexico. The continuous changes in latitude and altitude and topography result in a great variety of landscape, scenery, and plant and animal life. There are picturesque Indians and interesting archaeological ruins *en route* and then, finally, the teeming metropolis of Mexico City is reached.

Southward from Mexico City the road continues through equally scenic country, although not all paved, to the city of Oaxaca in southern Mexico. Here it was that Cortez, the conqueror of Montezuma's empire, established his feudal seat. Here, too, are some of the finest ruins of ancient civilizations on this continent at Mitla and Monte Alban. Southward from Oaxaca the Pan American Highway route has to cross the last of Mexico's great mountain ranges through which the road is only in the state of construction at present. On the other side of the sierra or mountain range lies the low, warm country of the Isthmus of Tehuantepec, land of the far-famed beautiful Tehuana women. This mountain range must be crossed on the backs of sure-footed animals accustomed to the rough terrain of the mountain trails, since the highway is not yet quite completed. On the other side of the mountains the country becomes comparatively flat,

Top:—Mexico: burro and man carry load of pottery on the Pan American Highway near Tasquillo Bridge (Ixmiquilpan).

Centre:—Mexico: on the Pan American Highway near the Tasquillo Bridge close to Zimapán. A "cargador", or carrier, transports a great load of baskets to market at Zimapán.

Bottom:—Mexico: the trail over the mountains from Oaxaca down to Tehuantepec. These mules are laden with barrels of mexcal, a rum made from a wild maguey plant.





Mexico: road to Amecameca from Mexico City, in the winter time

and there are local bus services to various points on the isthmus. A train runs all the way to the Guatemala border over parts not served by such native bus service.

All of Guatemala is crossed by highway, and there is regular bus service over the Pan American Highway between Guatemala City and San Salvador. But Guatemala is a country in which it is well worth tarrying, probably the most interesting of all Central American countries, with its very rugged mountain scenery and colourful native life. The most populated part of the country lies in the highlands with delightful climate especially in the capital, Guatemala City, which is an island of modernity in an Indian republic. By now we have come half the way from the American border to the Panama Canal, for it is fifteen hundred miles back to Laredo, Texas, closest English-speaking soil to the north, and it is the same distance southward to the English-speaking Canal Zone.

The next Central American country is El Salvador, the capital of which is reached by bus from Guatemala City in a journey of a little over half a day. As soon as the frontier is crossed into El Salvador there are paved roads running almost the length of this tiny republic. All along the way are endless miles of rolling green coffee country. Since the capital, San Salvador, is much lower, being only a few hundred feet above the sea-level, it is also much warmer. El Salvador is very volcanic and here, removed from the highway is Izalco, the most active volcano on the North American continent.

Mexico: ploughing through on the route of the Pan American Highway before its completion. This picture was taken in 1932 — four years before the official opening of the Highway to Mexico City.





Above:—Nicaragua: road building by hand work on a section of the Pan American Highway south of the capital, Managua

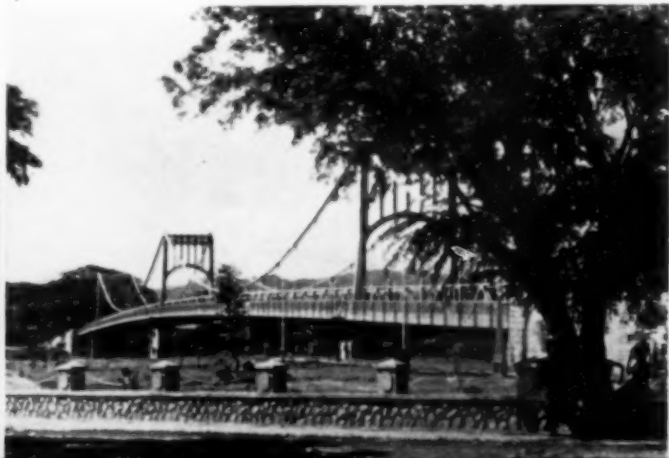


Top right:—A mule-train load of dynamite imported from America ascends to the mines in the mountains of interior Honduras after being unloaded at the port of San Lorenzo on the Pan American Highway.

Bottom right:—The Choluteca Bridge on the Pan American Highway in Honduras. This is probably the most beautiful of the several bridges in Central America along the Pan American Highway route given by the Government of the United States to the various republics for the encouragement of the completion of the Pan American Highway. Until the very recent completion of the Lempa River Bridge in El Salvador, this was also the largest of the bridges in Central America along the Pan American Highway.

Below:—A ship passing through the famous locks of the Panama Canal. The Pan American Highway crosses the Canal by means of a ferry at present.

Motoring into Honduras is only possible during the dry season which corresponds to North America's winter months. Right at the border is the shallow but wide Gorascorán River, too deep to ford in the rainy season, and a little farther on is the similar Nacaome River, also without a bridge as yet. It is only ninety miles across Honduras by the Pan American route and, although it is not paved, much of it is in constant use. The course is quite accurately established because along the way is a very large and handsome bridge across the Choluteca River, gift of the United States Government to the Republic of Honduras. Halfway across the country a branch road leaves the Pan American Highway and goes up to the





isolated mountain capital of the country, Tegucigalpa, which is in daily use for it connects with the main Pacific port of the country, San Lorenzo, which is also on the highway.

Several miles beyond the Choluteca Bridge, and within sight of Nicaragua, the road becomes a mountain trail again, and it is necessary to resort to mule-back into Nicaragua. The ride into Esteli, Nicaragua, takes several days through the once notorious revolutionary country in the days of Sandino and the United States Marine occupation. It is all quite peaceful to-day although primitive in living conditions. At Esteli there is bus service to the sweltering capital, Managua, on the shores of the lake of the same name. The capital city

Top left:—American surveyors run a line through the deep jungle of Nicaragua for a highway route.

Top right:—Near Latacunga: a typical stretch of Ecuadorian highway, generally built of heavy stones laid in one-car width in the centre with the earthen sides for passing and for native and animal traffic.

Bottom left:—From Guayaquil, Ecuador, the highway ascends to the very top of the Andes in one of the steepest and most spectacular climbs by road in the world.

Below:—The end of the Pan American Highway in Honduras near Nicaragua, where we had to take to pack animals and horses over the trail—one of the shorter unfinished links—into the first town of Nicaragua.



is beautifully laid out and rather attractive and modern, since much of it has been rebuilt since the destructive earthquake a few years ago.

Most of the inhabited part of Nicaragua is along the western side of the country which is rather low and through which the Pan American Highway is projected. Most of this can be travelled even without much in the way of roads in the dry season to the Costa Rican frontier. It is fairly level, arid country between the shores of Lake Nicaragua and the Pacific to Rivas, the last town in Nicaragua. Rivas is on the site of the proposed Nicaraguan inter-oceanic canal still considered an alternative to the Panama Canal. From here into Costa Rica the country becomes more rolling and finally mountainous again.

It is several days by horseback from Rivas to where paved highway begins in Costa Rica and continues to its capital, San José. In this stretch, however, there is good enough road at one place for a dry season bus service which exists between several towns, so that connecting up the capitals of Nicaragua and Costa Rica with highway is not a remote possibility.

San José is situated at just the right altitude for a perfect climate while at the same time it also enjoys the reputation of being a cultural centre of Central America. In fact the whole country is one of the most socially advanced of Latin American republics with exceedingly high literacy among its nearly pure white population. The blood is nearly pure Spanish, and, among other things, San José enjoys a far-famed reputation of feminine pulchritude.

Being an exceedingly rugged country, highway construction in Costa Rica is a very costly business. Where the population of the country lives in the central plateau section, the Pan American Highway is a paved road connecting the major communities southward as far as the old capital, Cartago. Beyond this to the Panama border most of Costa Rica is an unbroken mountainous wilderness with only trails marking the future international route. This is considered the most formidable gap in the whole course of the Pan American Highway to the Canal. American loans, however, have recently been

made to Costa Rica as well as to other Central American countries for their road programmes so that the completion of the international route through those sections at present impassable to automobile travel is within the realm of possible accomplishment within the next year or two.

Southward to Panama from the end of the highway in Costa Rica lies a great mountain barrier, the notorious Mountain of Death Pass. In a trip over this lonely country at altitudes of ten thousand feet it is difficult to use animals. The writer with two companions and guides made this passage on foot a couple of years ago without encountering any human life whatsoever for a period of a week. The ill-reputed pass obtained its name from the fact that all along the way the treacherous trail is marked by the graves of those who had succumbed in attempting to make its passage. Yet this trail has been well marked since the Spanish colonial days when it was the overland road from Panama into Central America. Indian graves have been uncovered along the way indicating that it was a very famous route of primitive Indian civilizations. This gap obviously must be detoured with automobile by a water passage along the coast to northern Panama.

At the border of Panama low country is again encountered, and, shortly, south of the frontier, a road runs into David, northernmost centre of the Republic of Panama. From here there is a daily bus service down the whole length of Panama to its capital at the Canal. The international route runs down the Pacific side of the country over fairly level or rolling country most of the way where highway construction is a comparatively simple matter. Half of this present Panama Highway is paved and the rest is all-weather road. It passes through monotonous banks of lush, green jungle for most of the way, although this jungle opens up from time to time to reveal a tropical Panama town, generally picturesque and colourful with a riot of tropical bloom.

Panama City, tropical playground, is the Mecca of the tourist by land, sea, and air. Here, in the Canal Zone, there are again many English-speaking people, after

a three thousand-mile odyssey through wild and tropical jungle, and contact with quaint indigenous and Latin cultures *en route*.

South of Panama City the road is only paved some 35 miles to Chepo where real Panamanian jungle continues all the way down to and into Colombia. This stretch of some 300 miles south of Panama is a comparatively unknown land. The writer has partially penetrated it from south of Panama City and north from Colombia, and photographed the part in between from the air. Because it is so little known, this section is the favourite theme for wild stories, but there are people who have gone through this section with whom the writer has talked. The only real difficulty of putting the highway through here will be the crossing of the Atrato River which lies south of the frontier in Colombia. This river flows sluggishly through low flat country which is flooded by its many branches and adjacent swamps to the extent of thirty or forty miles in width. Until it can be found economical to build the highway across this river, it is more feasible to ferry cars from some point on the Panama coast to Turbo on the Gulf of Darien in Colombia. The Colombians are just completing their highway system northward down to the coast at this point.

From northern Colombia you can drive through beautiful and progressive Medellin and thence to Bogotá, charming capital of the first South American country on the way. From Bogotá a detour can be made across Colombia and Venezuela to the capital of the latter over an all-weather branch of the Pan American Highway called the Simon Bolivar Highway, possibly reaching La Guaira, port of Caracas, capital of Venezuela.

The drive southward from Medellin and northern Colombia and on to the border of Ecuador is one of the most spectacular



Top:—The main plaza of Quito, Ecuador

Right:—The paramo, or high desolate plain, on top of the Andes, considerably above the timber line, where a peculiar growth called frailejo is found. This road is the Pan American Highway in northern Ecuador.





Above:—Peru: Quechuan maid totes her little sister.

Top:—Chile: the Auracanian Indian woman from Temuco, southern Chile, wears the typical hand-hammered silver ornaments for which these Indians are famous. The Auracanians are famed in prose and poetry as an unconquered race, and many of the best Chilean families have a trace of Auracanian blood.

Above:—A little Colombian girl with her faggot of wood

Top:—Peru: present-day descendants of those who built the mighty Inca wall in the background.



Peru: the Indian huts along the shores of Lake Titicaca seem to be camouflaged, so indistinguishable are they from the adjacent hillside.

mountain drives in the world. Bogotá is 8,000 feet high and Quito, Ecuador, is 9,500 feet above sea-level. You literally ride down the backbone of the Andes on this route. Up on top, away above the timber line is the great paramo, cold, desolate, flat plains of strange vegetation like that of another world. On the mountain-sides the Indians cultivate the land in patch-work style which gives a peculiar crazy-quilt pattern to the landscape. All of the Colombian highways are passable at all times of the year although none of them are paved. They are simply hard earth or stone surface. It is slightly

under a thousand miles across Colombia by the Pan American Highway.

Only 160 miles across the Colombian frontier lies Quito, capital of Ecuador. Eighteen miles north of the city the Pan American Highway crosses the equator where it is cool instead of warm at 8,000 feet elevation. South American capitals become more interesting as you proceed southward, and Quito is still a quaint Spanish colonial centre with many remains of old Spanish days. It is called the City of Churches for everywhere you turn in its steep hilly streets a charming old Spanish church is certain to catch the eye.

A Peruvian Indian boy with his favourite llama travelling along the highway.





We cross the Sullana River in northern Peru by means of a "balsa", or ferry, consisting of planks laid over two boats.



Peru: a curious llama and donkey peer into our expedition car on the shores of Lake Titicaca.

The 721 miles of Pan American Highway across Ecuador is not yet entirely completed. Before arriving at the Peruvian frontier you go down abruptly from the tops of the mountains in a spectacular descent to Guayaquil at sea-level. Here, for the time being, it is necessary to take a boat across the gulf of the same name to a point near the Peruvian frontier where the Pan American Highway is again picked up in Peru. Ecuador is a spectacular country in spite of its small size. On top of the Andean plateau the highway, as in

Colombia, passes across desolate paramo, always with some of the mightiest of Andean snow-capped peaks within sight. The Indians, too, are very colourful and they present a particularly vivid sight when thousands of them congregate in their brilliantly hued costumes on market days in the centres such as Ibarra, Otavalo and Ambato along the way. Any evening in Guayaquil is almost certain to offer one of the gorgeous sunsets for which this place is famed throughout the world.

The Pan American Highway runs 1,666



Left:—Chile: road up to Christ of Andes Pass between Chile and Argentina. For a nominal toll, cars may avoid the steepest part of the climb by driving through the two-mile railway tunnel, the entrance to which is seen far below.

Below:—The central valley of Chile — 84-mile road between the port of Valparaiso and the capital, Santiago





Rolling red earth and Parana pines typify the scenery of southern Brazil.



Uruguay: on the border between Uruguay and Brazil we ran into unusual rains and country flooded to such an extent that we had to resort to various kinds of help.

miles through Peru from the border of Ecuador on the north to Chile on the south. This whole length passes through the coastal desert of the country for almost the entire distance save where it crosses a frequent green oasis estuary of a river or enters a city such as the capital, Lima. Over a thousand miles of this road is paved, the longest continuous piece of paved Pan American Highway in all Latin America. Although practically all desert, this drive across Peru is far from being monotonous for it offers an ever-changing

kaleidoscope of sublime scenery. Some portions would make a perfect motion picture setting of the wind-blown sand dunes of the great Sahara, while others skirt alongside the blue Pacific. Again it goes far inland and climbs, ascending and descending among colourful foothills of the Andes, and, finally, charming Lima awaits us, by far the most attractive capital visited so far. We have come so far into the south temperate zone that now we do not need higher elevation to relieve us of the heavy tropical heat. The climate of

Right:—For a thousand miles the route of the Pan American Highway is nothing but mere tracks over the great desert of northern Chile down toward Santiago.

Below:—The Pan American Highway is paved for one thousand miles across the coastal desert of Peru; this is the longest continuous stretch of paved Pan American Highway on the continent.





The Brazilian Senate Building at Rio

Lima is warm but not oppressive. We now have the cool antarctic breezes from the ocean tempering the climate. A great modern metropolis is Lima, withal retaining an interesting Spanish colonial atmosphere justifying its being called the City of Kings.

South of Lima the Pan American Highway continues over practically the same type of desert terrain. A detour can be taken from Lima over the great Central Highway of Peru right through the heart of the Andes to Cusco, former seat of the Inca Empire. On the way, you cross Anticona Pass at 16,000 feet, the highest point touched by highway in the world. This is a truly spectacular drive and is, without question, the most outstanding part of any motor tour in all South America. Near Cusco the road joins the Pan American Highway route to La Paz, capital of Bolivia, and highest capital in all the Americas, 12,000 feet above sea-level. This is on that branch of the Pan American Highway which leads directly down to Buenos Aires diagonally across the continent. In order to follow the other branch of the Pan American Highway to Santiago one must return to the coast by way of Arequipa and join the coastal

route below Lima. From here the Pan American Highway continues along the coastal desert plateau to Tacna near the Chilean frontier. This section is not paved much of the way but is a good all-weather road for the most part.

In Chile 1,597 miles of Pan American Highway reach from the border of Peru to where the highway crosses into Argentina by the Cristo Redentor Pass. Very little of this is paved save around Santiago, but all of it is passable any season of the year, although snows block the pass over the Andes some months of the year. It is only because it never rains in the desert of northern Chile that this section is always passable, for, in many places, there is no road in the real sense of the word. Oftentimes the rough desert floor is preferred to the rough tracks called highway. Many succeeding vehicles detouring to the side of previously cut ruts have widened the path across the Chilean desert in places to as much as a quarter or half mile in width. Where used for any length of time, the ruts develop into a rippled, washboard effect on the road which results in alarming vibrations of the car. A thousand miles of this causes the metal of the car to crystallize to such an extent that springs and axle-housing shear off in a most peculiar manner. Once in a while there is a welcome relief when the road enters a pleasing Chilean town in an oasis of irrigated land. But over the long stretches between towns it is necessary to carry extra water and gasoline supplies for the desert is dry, dusty, and uninhabited.

As the road approaches central Chile toward Valparaiso the country becomes greener, and, when it approaches close to the sea, there are beautiful summer resorts above Viña del Mar. At the port of Valparaiso the road turns inland over 80 miles of concrete to the capital, Santiago. This capital is a gem of South American capitals, a perfect setting. The climate is delightfully mild and spring-like, the city is located in lush agricultural land with a back-drop of snow-capped Andean peaks. It is a city of beautiful parks, wide clear streets, and modern buildings.



Brazil: Rio de Janeiro harbour from Corcovado Mountain in back of the city. The famous Sugar Loaf Mountain rises vertically in the middle distance, guarding the entrance to one of the world's ideal harbours.

From Santiago the most direct route to Buenos Aires is due eastward across the famous Cristo Redentor Pass over the Andes some 13,000 feet high. The last and hardest part of the forbidding ascent to the pass itself may be saved by driving through the two mile-long railway tunnel which goes under the pass. After crossing the Andes here for the last time the road descends the gentler, eastern slopes in to the vineyard country around Mendoza.

Straight across the endless Argentine pampas the highway now proceeds, always ending in a needle point in the interminably level space straight ahead. This is the famed Argentine pampas, former range of the romantic and now legendary gaucho. To-day the land is fenced off into great cattle and sheep ranches and extensive farms of wheat, corn and flax. Gone is the former open range and corner "boliche" or tavern; instead, the highway plunges into

São Paulo, industrial city of Brazil, at night





Argentina: a group of sheep herders stop on the lonely Patagonia pampas to have their yerba-mate tea and roast mutton.



Argentina: sheep — nothing but sheep — is all one sees on the southern tip of the continent.

a town of modern buildings and electric lights and out again onto the unbroken levelness of the ocean-like pampas.

Approaching Buenos Aires after a thousand miles across the flat pampas, the towns and villages become more frequent and, almost before you know it, the road leads through the streets of South America's largest metropolis and third largest city of the hemisphere. Here live one-sixth of the people of the entire Argentine Republic crowded into a city which reminds you of Chicago and Paris at the same time. The extremely bustling left-hand driving traffic is somewhat bewildering. Argentina, Panama and Uruguay are the only countries that still adhere to the left-hand

drive on this hemisphere. Paved highways radiate in all directions from Buenos Aires, although, as stated before, no continuous highway reaches Asunción, the interior capital of Paraguay. It is necessary to ferry a considerable distance up the Plate River to Resistencia and then over very poor roads into the capital of this little Indian republic. The 2,000-mile drive up the coast from Buenos Aires to Rio de Janeiro is possible.

A 31-mile ferry across the River Plate to Colonia in Uruguay brings one to a concrete road leading into Montevideo, the Uruguayan capital. The beautiful beaches of this city, lined with modern apartments, hotels, and private homes, are smaller



Giant ant hill along the Pan American Highway in northern Panama



Argentina: the wild rhea, or American ostrich, and the guanaco were all the life we saw on the endless wastes of the desolate Patagonia pampas.



A gigantic Ceiba tree such as is found in the tropical rain forest of the Panama jungle.

duplicates of the famous beaches of Rio de Janeiro. Outside of the capital the country of Uruguay is very similar to Argentina save that it is more rolling. Ninety per cent of the country is given to cattle raising. It is perceptibly warmer too, for we are heading north toward the tropics, and lemon and orange trees are growing around the farm houses now and soon the landscape is dotted with tropical palms.

The good road of Uruguay ends abruptly near the Brazilian frontier and here we encountered the most difficult going of the entire trip. Unusual rains and floods had converted the roads on both sides of the Brazilian border into quagmires of mud. Even with tire chains we became bogged

down a number of times so that we had to be pulled out by oxen and horses along the way. A few miles north of the Brazilian frontier, however, we arrived at the famous beach drive of southern Brazil where for some 300 miles the highway at present is simply the smooth, wet sands along the ocean's edge, used by buses, trucks and private cars alike. This makes an ideal roadbed when the sea is tranquil and the waves do not reach too far inshore. When the route turns inland again it is through the German-settled country of southern Brazil. Places like Blumenau, Joinville, and Curitiba are really neat little German cities and the land between is the rolling red earth of Brazil, in some



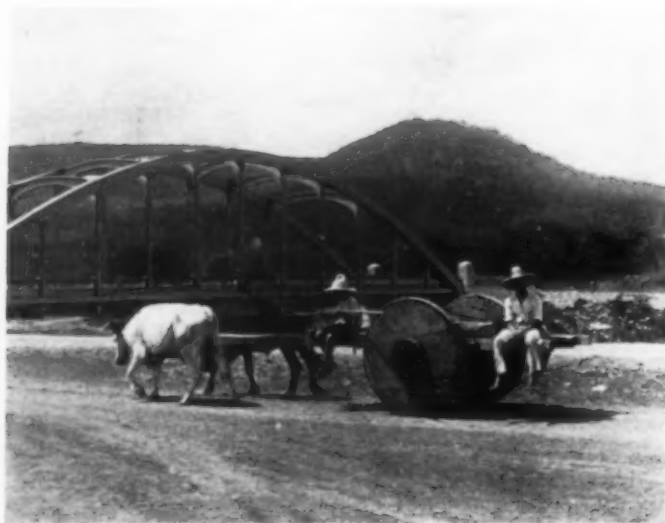
Argentina: the streets of Buenos Aires, like those of Paris, have a quaint charm all their own.

places carefully cultivated by the German farmers and, in others, nothing but dense, green, tropical scenery.

None of the highways of Brazil are paved but after leaving Curitiba they are so well graded, packed and surfaced, that they are almost like pavement. It is interesting country all the way to Rio, being not coffee land as one might expect, for that is farther back, but a region of general (including cotton) farms. Brazilian towns along the way, are usually colourful but São Paulo is a teeming metropolis and industrial city, more like Chicago of the United States. Most of the country up to Rio is fairly well elevated, but, just before arriving at the Brazilian capital, the highway drops down to sea-level and soon thereafter you roll into South America's playground, the place that aspires to be the Paris of America. Praises of attractive Rio on the shores of a splendid landlocked harbour with its many successive suburbs and attractive beaches have been deservedly sung by many. Suffice to say that its outstanding beaches, hotels, and casinos have made it the playground of South America. It is even replacing Paris in the eyes of many wealthy pleasure-

seekers of this hemisphere.

No roads of any note continue northward from Rio. It will be many years before a highway is constructed around the northern rim of South America. Lack of important population centres would not encourage it, if the low, wet, jungleland did not actually discourage it. But nothing is certain or impossible in these days of rapid change. Even at the present writing Brazil has, with the encouragement of American capital, launched forth a stupendous programme of highway construction including a road across the heart of jungle country toward Bolivia which was considered, until a few years ago, impossible of development for another century. Fingers of highways are also reaching down into the great Amazon basin from the main trunk line of the Pan American Highway in Peru and Ecuador. If the present rate of highway development continues unabated, the most remote parts of the hemisphere will be connected with every other part by a veritable network of modern highways. The international, economic, cultural and social implications of this are almost beyond the ken of our present understanding.



The Sébaco River Bridge over the river by the same name along the Pan American Highway route in interior Nicaragua near the frontier of Honduras. This bridge, the gift of the United States Government to the Republic of Nicaragua, like many others in Central America, was given to encourage completion of the Pan American Highway in those countries.



Tabor, a typical little vil-
lage along the highway, in
western Venezuela

Descent from Mucuchies
Pass, interior of western
Venezuela in the Andes



SEAWAY ACROSS TOP OF THE WORLD

Great Feats of Russia's "Captains of the Ice"

by E. R. YARHAM

"CAPTAINS of the Ice" — such is the proud title borne by the masters of Russia's icebreakers, which work far away north of the Arctic Circle, in temperatures far below zero, blasting their way through the frozen ocean, penetrating the Polar fog or nosing cautiously through blinding blizzards, in peace-time to keep open a seaway to civilization for Russia's Polar Empire, whose sea-coast stretches from the White Sea to Bering Strait, and now in time of war shepherding through the convoys with their priceless freights of war supplies.

Their tough crews are heroes for whom the men of the Empire's Merchant Navy have the utmost admiration, for without them it would have been impossible for the convoys to reach northern Russia during the critical months of last winter, when every weapon was rushed direct to the front. The icebreakers met them with the regularity of clockwork, and smashed their way through the besieging icefields into harbour. Their task in winter is to maintain the lifeline of the northern ports; and in spring and summer to shear open the historic Northeast Passage along the Arctic Coast of European Russia and Siberia to Vladivostok — a route safe from any enemy.

The men of the Allied convoys sail to Russia's Polar ports and return, the whole trip occupying a comparatively short time. But Russia's icebreaker crews are in Far Northern latitudes the whole year round. Their constant task is to navigate through the endless ice-pack and fog of the Arctic Ocean, and in winter the hazards are infinitely greater because of the unbroken darkness. Sometimes the ice piles round the sturdy ships to a height of fifteen feet, and very often more than three-quarters of the voyage from Murmansk or Archangel to Vladivostok is through fog.

Some faint idea of the hazards and hardships these navigators of the icefields have to face can be gained from the experiences of the convoys which reached Russian Arctic ports last winter carrying planes, tanks, guns, munitions, and medical

stores. As the ships ploughed farther and farther north, with the lean grey destroyers cutting through the icy seas on their flanks in search of U-boats, the cold was killing, and the wind, which always seemed at gale force, whirled blizzards around them, making navigation almost impossible, and the task of keeping the ships in line a nightmare. As the waves broke over the decks the spray froze immediately, and on the warships ice formed six inches thick on gun bearings and armour plating. Although electric radiators were burning day and night, ice still formed on the cabin walls. On arrival steam jets had to be fitted before anchors could be dropped, and axes and hammers wielded to free the capstan and prise the cable from the decks.

The most spectacular achievement of Russia's icebreakers is the opening of the Northeast Passage, literally a seaway across the top of the world, and the most significant oceanic development of the twentieth century. At last, after many disappointments such as the wreck of the *Chelyuskin* (1934) and the imprisonment of the icebreaker *Sedov* (or *Sedoff*) from 1937-39, the Northeast Passage has turned the corner financially, and now over 100 vessels regularly make the voyage from Europe to the Far East or vice versa every season. The route is also now patrolled along its entire length by planes, a development instituted in 1940. Thus has been opened to ocean-going vessels the famous northern sea route sought for centuries by explorers and merchants before the opening of the Suez Canal as the shortest water route between the markets of Europe and the riches of the Orient. It is still part of the Soviet programme that the Polar Ocean shall displace the Indian Ocean as the highway to the East. Fantastic as it sounds it may come to pass.

In the less than quarter of a century that the Russians have been intensively developing the Arctic, marvels have been accomplished; a century will see the North revolutionized out of knowledge. A vast and ambitious scheme of industrialization, navigation and aviation — which can be

compared with the other gigantic undertaking, building up new war industries in the Urals and beyond — is afoot in the Russian North, where towns and ports are being built, and factories, mines, farms, schools and hospitals are springing up overnight. Russia owns half the Polar basin, half the shores of the world's Arctic seas, six thousand miles of coast, and behind these shores lie incalculable riches.

For it is a quirk of Nature that much of the mineral wealth of the world is found in the remote northern regions. Spitsbergen is rich in coal; Alaska was once despised as a frozen wilderness, now it is known to be a treasure-store of gold and other minerals, and in half a century \$900,000,000 worth of mineral wealth has been won from it.

The most difficult problem is how to get these products away. To the south lie the vast unpathed spaces of Siberia where communications are still primitive, but to the north flow Russia's three mightiest rivers. The Yenisei (3,300 miles), the Lena (2,800 miles), and the Obi (2,700 miles) rank, although few of us remember it, among the world's ten mightiest waterways. Only the Missouri-Mississippi, Amazon, Nile, and Yangtze exceed the first in length. True they are ice-bound for some months of the year, and they empty themselves into the frozen Arctic Sea, but these handicaps are not insuperable, declare the enthusiastic Russians. These mighty streams offer the obvious artery of commerce for their new Empire of the North, and in conjunction with the Northeast Passage they are steadily building up a thriving trade from ports newly established. Fleets of river freighters move Siberia's products down the rivers, taking back such essential supplies as building material, machinery, clothing, and certain types of food. At the ports the freights are changed over to ocean-going vessels, which establish communication with Europe, America, and the Far East.

Smolka, the English journalist who visited these swiftly growing ports not long before the war, and who describes the enterprise now in hand as the U.S.S.R.'s "modern Socialistic equivalent of the East

India Company", says Government officials there are absolutely convinced of the tremendous economic value of the new Arctic Ocean highway. Over vast areas of Siberia 100 degrees of frost are by no means uncommon in winter, the ground is frozen all the year round, except that during the short, hot summer three to four feet on the surface thaw, and the primitive roads are turned into quagmires. The rivers often afford the only possible routes for transport.

It costs 1,000 roubles* to carry a ton of metal over the Trans-Siberian Railway—always over-worked—to Irkutsk, an important gold and fur centre in Eastern Siberia, and then on to Yakutsk, capital of the Yakut Republic, down the Lena. The cost is only 600 roubles if it is taken to Murmansk by rail, and then by the Northern Sea Route to the newly-built Port Tiksi on the Lena, finally by river craft to Yakutsk. No other route can compare with this one from European Russia to the eastern maritime provinces of Siberia. Murmansk to Vladivostok through the Panama Canal is 14,000 miles, via the Northeast Passage only 6,000 miles.

Where the commercial value of the new seaway is great, strategically its importance is perhaps even more outstanding, and this is undoubtedly one of the reasons why the Soviet Government has spared no expense in opening it up. Traffic using the Northeast Passage is absolutely safe from any form of attack, even that of the long-distance bomber, as contrasted with all other ocean routes from European Russia to the Far East. Although open only during the late summer the Arctic route last year relieved the strain on the Trans-Siberian Railway to an appreciable extent, and as well it provides a line of communication with America's biggest territory, Alaska. With the opening of the Alaska Highway a few months ago, the route is even more valuable; American and Canadian engineers worked night and day to complete this link between the United States and Alaska via British Columbia. It is now possible to rush supplies to Alaska by road, where they can be shipped through the Bering

*Approximately \$500.

Strait, and convoyed by Russian ice-breakers to any of the Arctic ports, and more particularly to Archangel on the White Sea, which has direct rail communication with Moscow, and with Murmansk which has access to the White Sea Canal linking up with Leningrad. Murmansk has been developed into an impregnable naval base, mainly for the protection of the Northern Sea Route, and Russian warships based on it have effected considerable havoc on German shipping in the Barents Sea.

During the past few years the Russian Government has been concentrating on designing more and more powerful ice-breakers to maintain an ice-free route for a longer period. The adventurers of the great days of the sixteenth century would open their eyes in amazement remembering how the wooden hulls of their cockleshells battered in vain against the far-stretching icefields that barred their progress. In those famous days of discovery the lure of the Northeast and Northwest Passages was perennial, and many a gallant life was lost in attempting to probe their mysteries. Among them was Sir Hugh Willoughby (1553), who with his men was found frozen on the Kola Peninsula, and his "pilot-general", Richard Chancellor, perished at sea when returning from a second voyage to Archangel. It is an interesting historical fact that Archangel, Russia's famous Arctic port, owes its foundation to the building of an English factory there by Chancellor. The eminent navigator, Henry Hudson, raked the Barents Sea in vain and, "void of hope of a northeast passage", turned to the northwest, only to fail again. Tsar Boris Godunov (d. 1605) told foreigners to keep out of the Arctic, but, typically, Peter the Great ordered the vigorous prosecution of exploration in the Far North and the mapping of the coasts of Russia and Siberia. The task took ten years, and involved terrible hardships, but at the same time produced many heroic figures, through whose efforts the route of the Northeast Passage became fully known by the middle of the eighteenth century, although not for another 100 years did a ship get through. Among these were Bering, who ascertained the existence of a strait between Siberia and

Alaska; Lieut. Chelyuskin, who rounded the most northerly point in Siberia, which now bears his name, in sledges; Prontischev and his young wife, who both died of scurvy when trying to sail from the Lena delta to the Yenisei; and Laptev, who made further attempts.

A sturdy English sea captain, Joseph Wiggins of Sunderland, was a pioneer among the commercial users of the Arctic route. He led the way for trade with Siberia by crossing the Kara Sea to reach the Obi and then the Yenisei. That was in the early seventies, and then the famous Swedish explorer, Nils Nordenskiöld, got through at last. In the little *Vega* he reached the northernmost point of the Old World, Cape Chelyuskin, for centuries the goal of unsuccessful struggles. A week later the mouth of the Lena was safely passed, and it seemed possible the gallant ship would get through in a single season. Then she was frozen in near Bering Strait in September, and release did not come until the next July, 294 days later.

On July 20, 1879, historic milestone in the story of the Northeast Passage, the *Vega* sailed through, and Nordenskiöld joyfully exclaimed: "After a lapse of 326 years, when the gallant Englishman Sir Hugh Willoughby made the first attempt at a Northeast Passage, I am sailing through Bering Strait, the first vessel to penetrate by the north from one of the great oceans to another". He was acclaimed everywhere on his return voyage—Hong Kong, Singapore, Suez, Naples, Lisbon, and Copenhagen, and reached Stockholm after a voyage of 22,189 miles. "Vega Day" is still celebrated every year in Stockholm, celebrating the conquest of the Arctic Ocean.

Indomitable persistency had proved, at last, that ships could navigate the Northeast Passage. The task of making it a commercial seaway has been left to Russia during the past decade. The first Five-Year Plan included a comprehensive scheme for the exploration of the Far North, the second covered the islands and coasts of the Arctic with a network of stations to act both as scientific observatories and radio stations. Devoted scientists and research workers stayed on throughout the

severest winters in order to obtain meteorological data. They suffered much, for conditions were incredibly primitive then, but they assured the success of the plans.

Icebreakers, aircraft, laboratories, everything essential to assist their work, were eventually put at the disposal of these scientists, explorers, and mariners. Invaluable as were the inventions of science, at rock-bottom the fact was that nothing could have been achieved without the dauntless heroism of the icebreaker crews. Though armed with all the information radio station and observatory could give them, upon them devolved the task of battling with the ice and carving a way through its seemingly impregnable mass. Fortunately for the success of the programme the Russians are probably more skilled at ice navigation than any other seamen. Icebreakers are kept at work not only in the Arctic, but in the Baltic, the Black Sea, Caspian, and the Far East (Vladivostok), and the Russians were the first nation in the world to employ them.

Yet up till 1937 all Russian icebreakers were built abroad, notable English firms such as Armstrong, Whitworth & Co., and Swan Hunter's, laying down some of them. Some of these ships are still in service, although the Soviets are replacing them as quickly as possible. They have a splendid record, acting as laboratories, observatories, training-ships, and making many discoveries, besides carrying on their usual work of escorting ships through the ice. The trouble is that, due to the nature of their job, they burn enormous quantities of coal. Not only have their engines to propel them, but as well must smash the weight of the hull against the ice. They are able to remain away from port only 25 days without returning to refuel. For this reason they are being superseded by more powerful oil-burning vessels, built in Russia. The most extraordinary adventure experienced by one of these veteran breakers was that of the *Sadko*. She sank during the last war, lay derelict for years off the Arctic Coast, but was eventually raised and refitted after a notable salvage feat, and still carries on her life's warfare against the ice.

Several new vessels were planned for service in the Far North. Among them

are the *Joseph Stalin*, *Kaganovitch*, *Molotov*, and *Otto Schmidt*. Exactly how far the programme had advanced when war began is not known with accuracy, but the flagship, *Joseph Stalin*, had gone to the Far North, and a second vessel was probably launched. These are the last word in icebreakers, magnificent ships of 11,000 to 12,000 tons, developing 12,000 horsepower, and carrying two planes for reconnaissance work. Powerful radio keeps the *Joseph Stalin* in touch with all scientific stations in the Arctic, with her fellow icebreakers along the Northern Seaway, and with Moscow. In calm water she has a speed of 15 knots, and her steel ribs and bows are capable of resisting the fiercest ice pressure. She is equipped with every modern device, electric pumps and power, fresh-water distillation equipment, and even refrigerators!

The Russians have reduced navigation in the Arctic, and even the methods of smashing through the icefields, to a scientific plan. There is no trusting to luck these days, as in the past, when a sailor aloft in the crow's nest did his best to search out a safe passage. Instead the ship's plane, or one asked for from a shore base, goes ahead. The ice watch pilot surveys hundreds of square miles of sea, while his observer keenly scrutinizes the drifting floes below. He draws a plan of the field, the first news is flashed back by radio to the icebreaker, so enabling a course to be set. Soon afterwards the plane returns, circles the bridge, and the plan is dropped by parachute. The master studies it, and the method of attack is decided upon, taking into account the time factor and the thickness of the ice. Where there is comparatively thin ice the icebreaker smashes her way forward, where thick explosives are also used.

Long experience has taught Russia's ice captains the best methods of defeating their pertinacious antagonist. Power, not speed, is the indispensable asset of their craft. They charge the floes, but their object where the ice is thick is not to clear a passage by ramming, but to make the bows climb the edge of the ice. The weight of the vessel then makes a crack or breaks away a large area. To facilitate this operation the icebreaker has very flat and dull bows, undercut to help them rise over

the ice, and it is to increase the breaking power that water tanks are fitted.

Not always does the ice yield at once, and the sequel is somewhat frightening to a traveller not used to the little capers of an icebreaker. When Smolka was in the North he was voyaging with a Russian ice captain who has the reputation of being one of the ablest on the northern sea route, and on one occasion when the ship smashed forward she found herself suspended with her forepart on the ice and the rest in the water, "a rather undignified position for such an impressive ship". The captain was quite unruffled, however, and he drove the propeller in the opposite direction. "Suddenly", says Smolka, "I felt the ship turning gently on its side. When she had a strong list, and I could hardly control my urge to draw the captain's attention to this new threat of disaster, she straightened herself back into a vertical position, but only to fall back into the newly-acquired habit immediately — this time to the left. But the ice did not give in. The crew then pumped water from one side of the hull into the other gradually. There were four explosions, and the vessel sank back into the water."

There is a rapidly growing trade between Murmansk, Archangel, and Vladivostok, and also with the intermediate river ports. The Russians plan to make the voyage between the first and last ports named regularly possible in a single season. Inevitably the war has curtailed the plans, but they are to be pushed forward with undiminished vigour at the first opportunity. They include the stationing of more icebreakers along the route, and the opening up of a passenger service between Murmansk and the port of Nikolaevsk in the maritime province of Siberia.

The Russians have proved themselves nothing if not daring in their Arctic enterprises during the past decade, and at the time when war broke out a wonderful vessel was under construction for the Government in a Dutch shipyard — the first passenger and cargo liner expressly designed for travel in the Arctic. The Nazi invasion of Holland means she is never destined to see the Far North. Planned to supply passenger and freight services along Russia's Polar coast, the

liner was to have been 500 feet long, and the plans provided for two hulls, the inner one insulated from the outer so that the intense cold could not find its way into the luxurious cabins. There were to be 500 of these, and travellers would have been able to enjoy magnificent ice and cliff scenery, even though the temperature was far below freezing point, so perfectly had everything been planned. She was designed to do 20 knots in open water, about three knots more than most fast cargo vessels.

The usual practice is to have the icebreakers stationed at strategic points along the Northern Seaway to shepherd the convoys. About two hundred ships use the route every season. The most difficult portions of the route are at the southern end of Novaya Zemlya, where the icebreakers help ships through the Kara Strait; then they are taken over by the next escort, which assists them through the Kara Sea and on past the mouth of the Yenisei through the central and most northerly, and therefore most difficult part of the route; and the remaining icebreakers operate in the difficult channels of the New Siberian Islands and the Bering Strait.

Over-optimistic idealists (not all of them Russians) have drawn fanciful pictures of navigation along the Northern Seaway being as free from hazard as sailing some sheltered tropical bay. This is ridiculous, and the perils still facing the seamen in the Far North were vividly pictured during the epic drift of the icebreaker *Sedov* (or *Sedoff*). The ice conditions during the 1937 season were extremely difficult, and in the late autumn not only several merchant ships but the icebreakers *Sadko*, *Malygin*, and the *Sedov* were caught among the New Siberian Islands. With their ships relentlessly crushed by the grinding ice-floes, food and fuel at low ebb, the crews spent an enforced stay during the unbroken winter night, and often foodstuff dropped from planes fell in inaccessible places.

As soon as the lengthening hours of daylight permitted, other planes sped north and took off many of the besieged crews, and then the powerful icebreaker *Yermak* smashed her way north to their rescue, and her captain touched the northernmost

point ever reached by a non-drifting vessel. The *Malygin* and *Sadko* were able to follow their rescuer through the path made in the pack ice into open water, but then a broken steering wheel and heavy concentrations of ice doomed the crippled *Sedov* to another winter of perilous drifting. For three days the *Yermak* kept hauling her crippled sister, but with the ice dangerously closing in on the weather-beaten *Malygin* and *Sadko* it was decided to leave her for another season lest all four ships be marooned. Five of the *Yermak's* crew volunteered to stay with the skeleton crew of ten on the beleaguered ship.

They were finally freed the next season, and all Moscow turned out to welcome the heroes after their sojourn of two years in the northern ice. Among those waiting to greet them at the station were Marshal Budenny and M. Papanin, head of the Northern Sea Route Administration. Later they drove triumphantly in flower-decked cars through the streets of the capital to the Kremlin.

The drift of the *Sedov* recalls that other epic of the Arctic route, the voyage of the *Chelyuskin*, (named after the Polar hero) which, although a failure, added another chapter to the story of the conquest of the Northeast Passage, and, as nothing else had done previously, flashed a vivid signal to the world of the impressive efforts which the Russians were making to convert their Polar lake into a trade route. The *Chelyuskin* failed — yet only a year later the route was conquered. Her attempt was one of the pioneer efforts to defeat the ice, and it has been said that the "magnitude of this single enterprise was as remarkable as the fate which befell it".

Icebreakers are limited in range by consideration of fuel, therefore, the Soviet Government decided in 1933, that it was necessary to see what a cargo vessel of 4,000 tons, of 2,500 horse-power, strengthened to sheer through moderate ice, and carrying a plane, could make of a summer voyage from Leningrad through the Arctic Ocean to Vladivostok. That was the main object, the second was to collect scientific data *en route*, and it is an extraordinary fact that the scientists calmly observed ice pressure while it crushed and sank their

ship. For about half the distance she was accompanied by the icebreaker *Krassin*, which then had to return for repairs. There were two other icebreakers, but one was in an unsatisfactory condition, and the second was busy off Cape Chelyuskin. The question was asked: should the *Chelyuskin* turn back? No — the expedition must achieve the task set it, and so she sailed on.

After several false alarms the almost inevitable happened. The ship had almost completed her Arctic voyage when the ice closed round her in the Gulf of Kolyuchin; she began to drift safely east, and it seemed would get sucked in through the Bering Strait; then a northerly drift carried her back again. For three months, locked in the ice of the Choukchi Sea, she still drifted slowly north, then in February severe packing of the ice stove her in like an eggshell and she sank within a couple of hours 90 miles from the coast, but luckily not before the crew had managed to tumble out scientific equipment, stores, and food upon the ice. A Polar expedition, in the normal sense of the word, could have reached the mainland. But there were women on board, and so this was impossible. With admirable calm the company settled down to await rescue, confident Moscow would arrange it, for they were fortunate in that they were able to achieve wireless contact.

The inspiration of the castaways was Professor Otto Schmidt, who lectured them, encouraged them by news of the preparations being made to rescue them, and who, in 60 degrees of frost, supervised the making of an aerodrome on the floe. Conditions were appalling, but the wrecked never lost heart, and in equally terrible conditions Russian airmen began to assemble at bases on both sides of the Bering Strait. A month after the *Chelyuskin* sank the rescuing planes appeared, and the runway was found to be just long enough for hazardous landings and risky take-offs. Passengers were stowed under the wings as well as in the cabins, and on April 13, two months to the day after the wreck, the whole party was safe.

The official story of this astonishing story of the Arctic, and of the two month's

nightmare upon the ice, moves one to admiration of what man (and woman) can endure; the depressing darkness and bitter cold; the groaning ice, and the fissures which would appear without warning, cutting clean through the camp; the radio operator husbanding his precious batteries in his flimsy tent shaken by the blizzard; the wall newspaper and lectures in the central hut, finally capsized and ruined by the ice-pack; and on the other hand the airmen, first beaten back by snow and fog, ice loading their wings, desperate landings in drifts, and digging themselves out; flying through blizzards, just missing the mountain tops, crashing down upon the floes, stowing their human cargo in the parachute cases under the wings, and then lifting their overloaded machines from off the floes at the end of the runway, and rising crazily into the biting air. In flight they had to master the controls with hands numbed by the cold that also threatened to freeze their lungs. Yet they won through.

The next season, 1935, the first real success was achieved, when two Soviet ships made the Northeast Passage, two from the East and two from the West. Heavily laden, they called at the new Arctic ports Russia has established, and one continued her long voyage from Vladivostok on to London with a load of timber picked up at the most famous of the young ports, Igarka, on the Yenisei, 100 miles within the Arctic. The pairs started from Murmansk and Vladivostok respectively, and originally carried thousands of tons of foodstuffs and equipment for the Arctic stations, besides horses, cows, pigs, dogs, cats, and poultry which were landed at various ports. They also carried some hundreds of passengers, some of whom were scientists and research workers going to relieve the staffs of some of the Polar stations, and others were landed at the new ports of Tiksi on Laptev Bay at the mouth of the Lena, and Dickson Island, which is an important coaling base and

scientific station as well. Igarka is symbolic of what Russia is doing in the Far North. A dozen years back it was a collection of ramshackle huts; now its population is 20,000. Timber and concrete harbour walls have been erected under conditions of sub-zero weather, scores of modern buildings have been erected in regions of almost eternal frost, and every resource of modern engineering has been employed to heat miles of water mains and sewers laid in the frozen soil.

The pioneer freighters of 1935 were guided by constant wireless reports about the weather and ice conditions, and four relays of powerful icebreakers were awaiting to assist. They arrived at their destinations ahead of time-table. Such success would have been impossible but for the devoted duty of icebreaker crews and scientists in the Far North, hundreds of miles away from all amenities of civilization. One party of scientists lived for no less than five years before relieved, on lonely Wrangel Island. Another isolated station is Hooker Island, south of Franz Joseph Land, yet Soviet women are bravely living there with their husbands. A third is 100 miles nearer the Pole still, Prince Rupert Island, which the Soviets proudly claim "the northernmost radio station in the world".

By the middle of the century the Russians hope to have established a chain of nearly equi-distant, modernly-equipped ports along the northern coast to serve their Arctic fleet as coaling, repair and supply stations, together with relays of mighty icebreakers the entire length of the route, and the whole of their Arctic islands dotted with scientific stations which will hourly flash reports to the stream of passenger and cargo vessels that will make the Northern Seaway one of the great ocean highways of world commerce.

And who, remembering the marvellous achievements of the past decade, dare say they will not succeed?

Near Mt. Foraker and Mt. McKinley. Winging its way over a bleak landscape of ice and snow, this solitary aeroplane provides a striking symbol of man's conquest over the elements.



ALASKA, SPRINGBOARD OF ATTACK

by JOSEPH WECHSBERG

S"OMEWHERE" north of Fort St. John, British Columbia, United States Army Engineers, and Canadian construction workers have completed one of the toughest, greatest, most far-reaching projects to come out of this war: the long-visualized, often-postponed, finally-decided Alaska Highway,* a 1,500-mile, all-weather road through the vast hinterland of British Columbia, the Yukon Territory and Central Alaska which connects the continental United States with its most important, strategic outpost in the Far North.

Transportation has always been Alaska's main problem. With an area of 586,000 square miles, larger than the Province of Quebec, the Territory of Alaska has only 80,000 people, one inhabitant to eight square miles. The only railroad is a one-track 470-mile line between Seward and Fairbanks, while only two highways, 534 miles, are well built modern roads. Between the country's settlements there are wild mountain ranges, deep valleys, barren gorges and dark-blue lakes, which have never seen white men. No wonder that Alaskans became air-minded.

Japan's aggression brought the realization that this area, so vital for the defence of North America, was connected with the

United States only by plane and by ship. The water-way through the fog-shrouded fjords of the Inside Passage is open all year long, but it is slow, terribly slow, and there are not enough ships to carry all the men and supplies. Most foodstuffs have to be brought in, and almost everything else. When the Army and Navy took over Alaska and began to transform the territory into an Arctic fortress, they had to haul in building material, tools, machinery, every nail and every piece of equipment. It became increasingly clear that what Alaska needed most, was a safe, direct overland route, a real life-line that would supplement the inadequate water and air-routes. Many years ago, the late Dr. S. F. Tolmie, Premier of British Columbia, had foreseen the necessity of such a road.

There already existed a road, starting at Blaine, Washington, running through the valley between the Coast Range and the Rockies to Vancouver, B.C. From there it goes along the wild canyon of the Frazer River, following the Nechako and Bulkely Valleys, descending to Hazelton, B.C. But instead of continuing this road 1,100 miles northward through the alpine scenery of the coastal region, the Canadian and United States Governments decided on a new highway north of Fort St. John,

*An authoritative documentary article on the Canada-Alaska Highway, now in the course of preparation, will be published in an early issue of the Journal.

farther inland and safely protected by the Rocky Mountains.

The new highway will connect and supply the many weather stations, radio range stations, auxiliary bases, the new airfields already built in Northwest Canada and the interior of Alaska. When this war is over, people will be driving from Edmonton to Fairbanks as safely and casually as they used to drive in the happy, old gasoline-unrationed days from New York to Chicago. If they have been in Alaska before, they will hardly recognize the country.

The war has brought a great many changes to Alaska. The silence of the blue fjords and inlets has been broken by the pounding noise of steel hammers, the grinding of concrete mixers, the crashing sounds of bulldozers and steam drills. Where tourists used to take photographs of exotic igloos and high totem-poles, the grounds are being smoothed for new runways. They tell of an oldtimer who recently came south after a seven-month stay of trapping and hunting at Point Barrow. When he stepped out of the bush-flyer's plane near the once-deserted ghost town, where he used to live, he had to pinch himself to make sure that he was not dreaming. Where the dilapidated façades of broken-down log houses, liquor stores and ugly gambling places had been standing, empty since the gay gold-rush 'nineties, there now were modern structures, a hangar, army barracks, a mess hall, a hospital. There was the echo of rivets; steam shovels were moving; soldiers were working on a new building. And — strangest sight of all — the rocky hill behind the town had disappeared.

The oldtimer stopped the first soldier he met. "The hill", he mumbled, "what happened to the hill?"

"We carried it away," the soldier answered, casually. "Had to dynamite it. Millions of tons of Alaskan rock will be removed before this war's over."

Total, global war, the Battle of the Pacific, and the growing importance of air power will bring more changes to the face of Alaska. Most people still think of furs and seal and Yukon gold and salmon, of Jack London and frozen waste, when Alaska is mentioned. They remember the household words of "the land of the long night" or "the country of unending winter"; of Secretary of State William H. Seward who bought the land from Russia in 1867

for a measly \$20 per acre, or a purchase price of \$7,200,000. So far America has taken out of Alaska \$2,000,000,000 worth of fish and gold and furs; by the first of the year Congress had appropriated almost \$150,000,000 for Alaska's arming.

After the war is over and the story of modern Alaska will be told, a grandiose epic of endurance will arise before our eyes. Three years ago, when the United States Army and Navy took over, the territory's only Army garrison numbered 300 soldiers at Chilkoot Barracks. The famed Alaskan "airports" were 1,000 to 1,400 feet long. The few roads were rough and narrow.

Quietly, without publicity fanfares, the armed forces have done a spectacular job in Alaska, transforming a wilderness outpost into a military stronghold in the face of enormous difficulties of climate, transportation, distance. The ground had to be thawed before the engineers could start digging; during the summer months the temperature went as high as 90 degrees, and for long weeks vast stretches of land became groundless swamps; in some places six feet of volcanic ashes had to be removed; in other places it was raining so hard that the concrete runways could be laid out only after a roof had been built above. There were labour problems; workers quit their jobs; planes carrying foodstuffs were grounded in bad weather; boats were late.

In spite of all these and other difficulties, the work has been done. You cannot blame the Army and Navy for jealously guarding their secrets; but it can be told that there now exist new naval stations, Army posts, airfields, cold-weather experimental stations all over the territory and more are being built every day and night, summer and winter, by three shifts of men. Soldiers from down south learn to ski, to shoot and fight on skis. They live in modern, well-heated, well-lighted barracks, get fresh milk and good food, spend their week-ends fishing, hunting, and mining. Their health and morale is excellent. Many soldiers say they are going back to Alaska after this war.

But the war has not ended yet and before it is over, Alaska may have won unexpected strategic importance. Up to now, most people think of the territory as a "defence" outpost. This is only one side of the picture, however.

In 1935, the late General Billy Mitchell said, "I think whoever holds Alaska will hold the world. I think it is the most

important strategic place in the world." The General had served in Alaska. He knew what he was talking about and subsequent happenings proved him right.

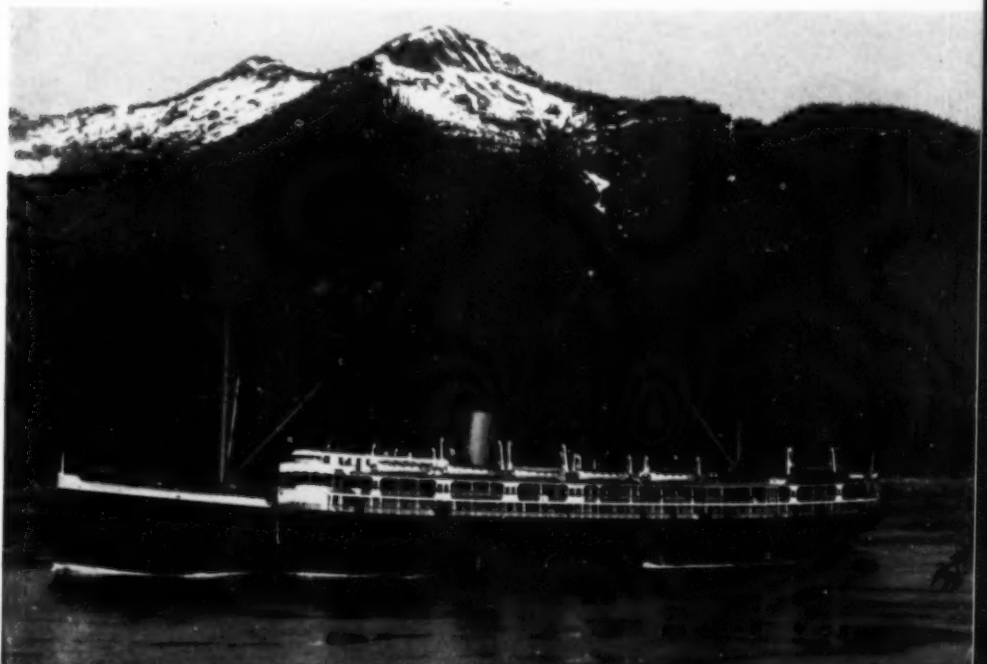
Military men agree that in order to completely defeat the Japs, Japan must be crushed in her own home and island empire. The logical springboards for that final attack on Japan are Alaska and the Asiatic mainland. Look at an orthographic map of the world: the "great circle" route between Seattle and Tokyo leads over Kodiak and Dutch Harbour—a route 5,000 miles shorter than the trade-route across the Pacific, north of Hawaii. From the bases of Alaska a strong offensive may be launched against the heart of the Japanese island empire. In a giant pinzers movement, a second onslaught would be launched, simultaneously, from the Asiatic mainland, the front which the Japs fear most. This front would rely on the vast manpower reservoir of Russia and China, and the arsenals of the United States, Canada and Great Britain. Thus the question, how to get war supplies to the Asiatic front, would become all-important.

Take another look at the orthographic map. It is obvious that the Alaska Highway may become the eastern, North-American portion of a great Alaska-Siberia "Burma Road", which would link the railway frontiers of Canada (north of Edmonton), and Siberia (at Irkutsk), by way of the Bering Strait. The Russians have almost completed a 5,000-mile road

system through Siberia, leading from the railroad head at Irkutsk to East Cape, just across the Bering Strait from Teller, Alaska. At its narrowest point the Bering Strait is only 56 miles long. It is solidly frozen during six months of the year, which would necessitate air-ferrying; and the large transport planes which Henry J. Kaiser is going to build would just be right for this task. Between June and November ships would ferry the supplies from Alaska to Siberia. The northern "Burma Road", as it is called in Washington discussions, would safely connect Canadian factories in Quebec and Ontario and the great American arsenal of Detroit with Russia's and China's front. There are no enemy submarines in these waters; and since the United Nations control the land masses where our fighter aircraft would be based, enemy planes would have no chance of breaking up this America-Asia supply route.

The Alaska life-line is a project of the future but considering Alaska's accomplishments in the past three years, the future may be nearer than we think. Alaska is not defensive-minded. There is a spirit of attack and offence around the Army posts, Navy stations, the stove-heated tents of construction workers and the boats patrolling the wide coast-line. General Simon Bolivar Buckner, head of the Alaska Defence Command, expressed this spirit when he said he prefers to call his post the Alaska *Offence* Command.

Ocean steamers cruise mountain canyons: a unique experience for the traveller in Alaska where there are eleven mountains higher than Mt. Whitney (14,495 feet), the highest elevation in the United States proper, while more than twenty others top the 10,000-foot mark.





School of porpoises

TRINIDAD—THE CROSSROADS OF THE WORLD

by C. O'B. FFRENCH *Illustrations by the author*



THE Olympics enveloped in heavy clouds issuing their smiles and frowns to a northern region of sunlight and snow or shaded forests were gone. Long days at sea had intercepted them with nothing for the eye but greyness — solid and liquid greyness — as the ship pitches headlong before a strong northern wind — nothing but the black albatross that glided tirelessly with us.

Then came a region of cloudlessness with day after day of blue sky; the sun, swinging an ever-widening arc in the heavens, increased, as it were, in volume and ferocity. Opposite the Farallon Rocks seals and blackfish had been sighted, but they too had been forgotten when the first flying fish had streaked the mirror that ever glided by. There was always some new excitement, a school of porpoises, a turtle, a fleet of Portuguese men-of-war

Black albatross





stretching from horizon to horizon, boobies or a tropic bird. But even these became monotonous as day by day the ship sailed deeper into the warmth of southern waters. At Panama I took an aeroplane and flew across the face of the Santa Martha Mountains and out across the



wastes of Venezuela, parched, brittle and thirsting for rain.

Across the Dragon's Mouth lay Trinidad, and our plane, appearing out of the sunset, landed us at Piarco airport, 18 miles from Port of Spain, the capital of the island.

Squarish in shape, Trinidad has three sharp corners. To the west it yields somewhat in a gulf to the discoloured waters of the Orinoco at the mouth of which river the island stands. A colleague was at the airport to meet me, and soon we were on our way up the eastern main road experiencing all the fascinating tortures of speeding in and out of a tangle of native jay walkers and crazy traffic. It was dark when we reached Port of Spain and the hotel. Under war conditions the capital is a busy centre and greatly overcrowded; accommodation is at a premium. There is but little choice of hotels; the uptown Queen's Park Hotel is the most modern, while the downtown Hotel de Paris is closer to the docks and stark realities. Exotic birds hang in cages around the bar parlour — their shrill cries drowned in the din and clamour for Planter's punch and beer.

The nights are cool and the days start fresh with the piercing call of the "kes-kadee". At six the hell of the night before is still asleep. Accustomed to solid walls and closed windows, the newcomer finds but little privacy in the tropics; the houses, designed for free passage of air, allow the slightest sigh of a next-door neighbour to be heard clearly through jalousies; he will find the romance of a tropical night profaned by drunks, babies, cat fights, radios and roosters. Most remarkable of these are the roosters. Thousands of cocks will crow at intervals throughout the night, their clarion notes rolling out into the distance as, block by block, these sleep-wreckers take up the call. After all that the visitor may well inquire why there are no eggs to be had for his breakfast; yet such is the case.

The city is situated on the north-westerly protrusion of the island, which nearly connects with the mainland of Venezuela. Behind the city a park and race-course, known as the Savannah, introduces the gentle slope of the landscape to the hills. Government House, situated at the upper side of the Savannah, and, next to it, the Botanical Gardens have a wonderful situation. A road winds up into the

hills through dense jungle, and, from various points on this road, one sees the city below laid out according to the mercator projection. It runs down to its dockland fringe along the coast; beyond this the Gulf of Paria yawns to a distance where southern ranges of hills are blurred in haze. Ten degrees north of the equator at the outlet of one of South America's largest rivers, Trinidad's average of humidity is such that many of the sun's rays, healing as well as harmful, are neutralized. Sun bathers will be disappointed to find themselves going a lobster red instead of a tan while vegetables will be found lacking in energy-giving vitamins. On the other hand, a cork helmet is quite unnecessary and most Europeans wear no hats at all. The climate obviously imposes a limitation of energy which explains the natural indolence of the inhabitants.

Let us imagine that we have been fortunate enough to secure a lodging for ourselves in one of the upper rooms of Miss X's boarding house. It is morning. The angelus has rung in the neighbouring convent. There are signs of day over the



hills. Their dense tree-lined silhouette is showing against the light of the coming sun — a sun, by the way, which rises between six and six-thirty all the year round. You wake out of a semi-conscious sleep and gaze at the fretworked walls of your room. A mosquito attacks you. You rise and eat an apple — a delicacy brought ashore from one of those grey ships now riding at anchor in the gulf which has managed to escape the submarine menace. The only shower is occupied, as always, and you use your jug and basin, splashing much water all over the bare boards of the floor. Four flights of steps take you down to breakfast.

The black boy, Hamilton Calandar, is cleaning the bannisters; he loves such phrases as "presumably" "does this signify?", "does necessity warrant?" etc. At a small table you sit and feed on bananas and cocoa while sand flies feed on your ankles.

The telephone is the most used article in the building, as the islanders have a passion for telephonic gossip. A French Creole lady is dialing her number for the sixth time. She is so fat that only her little finger can fit into the holes. The proprietress's dog is panting on his side in the hall, the day is already hot. The



veranda is broad and decorated with fret-work and a profusion of palms. Ivy is cleaning the chairs. She is enormous and known as Creeping Ivy, so slowly does she move.

"How are you Ivy?", you will say.

"Better sir."

"Why, have you been ill?"

"No sir, I've keepin' very well these days."

In the garden, amid the flowers and hummingbirds, is hard-working Ella, a

large straw hat covers her head; she is planting vegetables in a peace-time flower-bed.

"How are you Ella?", you will continue, knowing that to ignore the Negro is fatal to service.

"Very well sir, I've got a headache."

This is said in a plaintive voice, followed by a pitiful groan. You bring Ella to your room and give her an aspirin.

From your bedroom window you have an excellent view of the town which is stretched out like a green chessboard below — green intersected by pink and buff buildings. Close beneath your gaze live two Negro families separated only, in Trinidadian style, by a corrugated iron fence. In one house lives a large family of good people, clean in their spotless linen and very well-behaved. You will wonder how people of all ages and sizes fit into such a small apartment. In the other house there is a constant row. "No-good-Niggers". They drink "bush rum", beat their wives and use foul language that shocks the whole neighbourhood; their life is one long party. When things get tough in their small compound, the members of the good family take up positions at the corrugated iron fence, peering with self-righteous smirks through its holes. Invectives and flying furniture fill the air.

Close at hand a whole block is occupied by a convent. Down in the cloisters you will see white nuns and their black pupils. A few royal palms raise lofty heads above these buildings, their plume-like crowns blown bravely by the constant "trades". Beyond are church spires and then the





Saman tree

domed roof of the capital's "Red House"—the seat of Government, coloured ox-blood red. Before it lies one of the many public squares or gardens called Brunswick Square, with fountain and band stand. In this as in the Botanical Gardens, you will find the flamboyant and the saman tree, and a dozen other hard woods indigenous to the island. Besides these, the banyan and the beetlenut, the angostura and the weeping willow, which, by the way, unlike that found on tea cups, is a very upright conifer which makes a weeping sound as the breeze passes through its needles.

At the Botanical Gardens you will be accosted by the guide Albert. His tariff is sixty cents an hour. You will not shake him off under that time in spite of all efforts or protests that you are only interested in the trees of the island. To miss a tree would be to miss a beat in Albert's recitation, he would never recover his lines. He heedlessly continues in his flowery Oxford English.

"Allow me to lecture you sir on this tree", and so you make your progress, tree by tree, until you finally depart with your pockets bulging with beetlenuts,

coffee beans, almonds, bay or pimento and camphor leaves, nutmeg and other tangible fruits of the lectures you have attended. In Harris Square there is a notice which ominously warns the public that it is "prohibited to tether any animal or poultry or make use of the square for shaving, clipping or in any way cutting the hair of any person or animal". It further states that "to play cricket or any such dangerous game is prohibited, likewise to sleep on the benches or lie on the grass or commit a nuisance in the fountain".

The Negro element in Trinidad has made its own intellectual progress. When concerts are to be had, they are eagerly attended. There is a distinct movement toward pictorial art, and the island boasts of at least one first-class water colourist in Cazabon.

On the whole, the Trinidadian is not naturally musical, although a kind of song called a calipso is something entirely of his own creation. Groups of calipsoists go from house to house, particularly at carnival time, singing in unison to the accompaniment of a guitar, their melody, rhythm and wording being home-made and

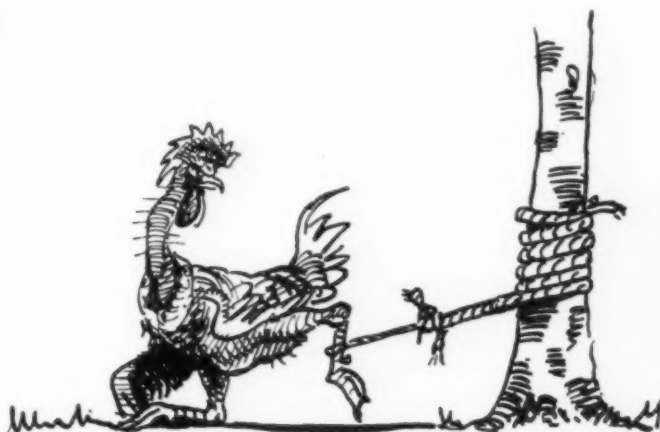


"Red House". View from my window, Port of Spain

different from anything that can be heard elsewhere. These songs are used by them as an almost tactful and semi-humorous means of airing their grievances.

Trinidad, 1864 square miles in area, is the most tropical of the West Indian Islands, which fact is explained by its position at the mouth of a great river breathing humidity and attracting a heavy precipitation. Geographically it is part of the mainland of Venezuela which it

resembles closely in its fauna and flora. There is indeed a striking contrast in this respect between Trinidad and its close neighbour to the east, Robinson Crusol's Island, in spite of the fact that they are in sight of each other. The Dragon's Mouth is the name of the northern channel between Trinidad and the mainland; in this there is a handful of small islands, one of which has recently





been given by the British Government to Venezuela.

The island's industries lie mostly in its southern half and centre round the famous Pitch Lake and oil fields. There are also rubber plantations which are a new departure and promise well for the

future. Until the arrival of the United States engineers and Walsh Driscoll on the scene in 1941, the employment problems of the island were hopeless but not tragic; now they are tragic but not hopeless. At first the native population was drawn from its jobs and small holdings in tens of thousands by the magnet of high wages — wages which indeed were quite out of proportion with the island's normal standards. Later, the effect of the deserted gardens and orchards began to be felt; jungle soon moves in when man moves out. The cry went up — "Fat purse, empty stumik". And lastly, as work approached completion and wholesale dismissals became imminent, the streets began to fill with discontented men unwilling to go back to humble wages. Prices are high and the cost of living has gone up forty-five per cent since 1941. In 1942 the average cost of a room with board was \$75.00 per month, or the equivalent of the average government employee's wage. "Are you working for the war effort?", a newcomer asked a young Canadian. "No," came the short reply, "I am working for the landladies of Port of Spain."

All public highways are asphalted with the local product, except a few hill roads exposed to washout or land-slide during

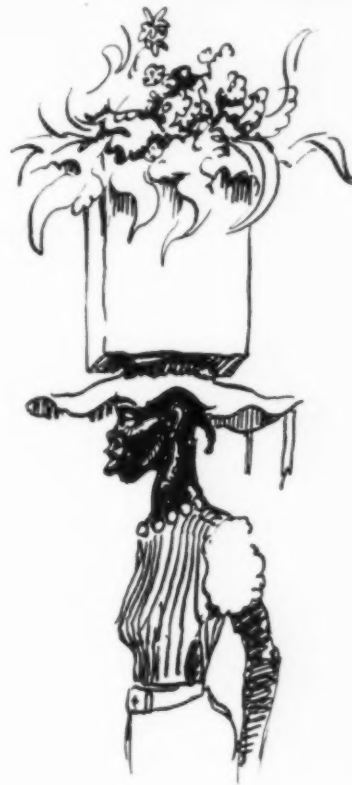
St. Peter's chapel



the rainy season. The Government is at present pushing a settlement scheme, by which new roads are opening up rich jungle land at the foot of the hills — land which will, in due course, be taken over by natives. Roughly speaking, the native population of Trinidad is divided into two halves, African and Indian, with a small percentage of whites, Syrians, Caribs and Chinese. Such town names as Arima, San Fernando, Port au Pierre, Fysapore, Port of Spain, and Fort Read are respectively Carib, Spanish, French, Indian, English and American in origin.

The island has a civil population of 450,000, of which Port of Spain has 75,000. Before the war started there were over a thousand miles of first-class highway, but this mileage has recently been both lengthened and improved by the Americans. Concerning railroads, there is little to say; the Government of Trinidad can boast of only 123 miles of permanent way.

Trinidad's main arterial road, the Eastern Highway, is worth describing. The sun is rising and there is a cold light gleaming on the asphalt as one drives out from Port of Spain in the early morning. Great masses of cumulus clouds tower above the hills; workers, preceded by their own long shadows, tramp toward the city in single file, a column on each side of the road, for they are coming in to their jobs. Women going to market carry their wares on their heads. Truckloads of men travel to some construction work. Features of the road are its pedestrians, its cyclists and its donkey carts; they swarm onto the highway so that driving a car becomes a hazardous business. The road is narrow, compactly built up and populous. It passes through Indian settlements, it passes under the spreading arms of saman trees, over narrow bridges, past Hindu temples, always travelling parallel to the hills and with the flat country to its south. One could even travel over this road with one's eyes shut and still retain a picture of it. That heavy sweetness is a coco-nut factory, and farther on the pungent fumes of a rum distillery pervade the air hanging drowsily about the surrounding jungle. At another point there is a lime factory and at a fourth the evil smells of the city dump. Then the temple and the Indian bazaars haunt a section of the road with musky incense from hubble bubble or charcoal fire. Tunapuna is unmistakable with its bustle and jabber



and its infectious thrill of paganism's loud and sudden laughter. But, if you use your eyes, the impression is indeed a lasting one — the beauty of the scenery, of the distant hills and the stretching plain and swamp, the little Indian huts, the mango groves, the bamboo and the vine,





Little Indian hut

and barefooted Indian girls whose beauty puts the orchids to shame; the police and warden station shaded beneath a great tree, and the village cricket ground stretched in the sunlight beside it; the rustic church upon the rise with its simple coloured-glass windows — always the same interest in the foreground, always the same mystery beyond. With all its attractions, tragedies, and comedies, this highway is ever a new experience and permanently a danger.

But now we are in Arima, a Carib name meaning "The-Place-of-Many-Waters".

The Caribs were dispersed after the second arrival of the English in 1595 under Sir Walter Raleigh and their deployments are hard to trace, but they always wandered back to their favourite haunt, Arima. Originally the island then known as Iere was inhabited by Arrawacks and, later, Caribs from the Lesser Antilles; it was first recorded by Columbus, who had determined to call the first land he discovered after the Holy Trinity; it was therefore a coincident that the three hills now known as the Trinity Hills, first hove into sight on 31st July, 1499, as he approached from the south-east. Trinidad was rediscovered by Roderigo Carranca

almost a hundred years later, although the French and English corsairs had used the island for "refitting and refreshing" for some fourteen years before that. To quote a contemporary Spanish newspaper, "It was found necessary to bring to light to the Indians (Arrawacks) the faith, to obstruct the British and the French corsairs, to prevent the capture of Indians and their sale as slaves in Margarita, to prevent the attack of the Caribs from Dominica, Granada and Matalino and other islands and the killing and eating of Indians in the island."

The island was finally captured from the Spanish by a British force under Sir Ralph Abercrombie in 1797, and it is interesting to note that the only substantial resistance met with was from the French settlers.

In Arima there lives a Carib queen who, nevertheless, is known by the humbler name of Mrs. Werges. This dignified old lady appears in all her glory at the head of her tribe in August. This is the Carib month which opens with the firing of an old Spanish cannon and culminates in a great procession on the feast of Santa Rosa. In Mrs. Werges' house, which is little

more than a lath and plaster cabin on the outskirts of the town, can be seen the remains of the silver cross which is the hereditary symbol of leadership in her tribe. The Christianization of these war-like Indians is traced to a mission of Capuchin monks who settled in Arima during the Spanish occupation, and whose patron saint was the one above mentioned.

The queen is gracious and receives guests. Her skin is the colour of that of a south sea islander; her hair is as black as the raven, despite her 86 years; her fingers are expressive and flexible, bending backwards as she stretches them out in conversation. There is something Spanish in her gestures which remain at the same time, Indian. Her nose is small, her cheekbones large, and the whole gives the impression of an American coastal Indian, yet she is full of refinement. It is an animated face, full of life and character, and her coal-black eyes have a distant expression as if her mind has long been wedded to the mysticisms of her tribe and its adopted religion.

Of the history of the tribe, little that is tangible can be obtained from their queen, all facts having been lost in the mirage of fantasy. Her humble house contains neither fineries nor comforts: a mahogany reliquary stands in the corner and is used for carrying the statue of their patron saint on August 29th when the whole is begarlanded and carried in lengthy procession. On the walls are a few treasured photographs and ornaments, while home-made rugs portraying cats lie on the floor.

After the abolition of slavery on the island, and until 1817, Portuguese, then Chinese, and later Indians, were imported under a system of indenture for working on the plantations.

The dry season in these parts lasts from Christmas until spring and from the end of April the rains are looked for — rains that come at last but are the last to leave. In the beginning of this beautiful but trying period the sky is scarred, but there is no rain: instead, during the breezeless tranquillity of the day a rising temperature covers you with sticky perspiration. The cocoa trees on the mountain-side are shaded by flower-laden immortelles, and the natives take shelter under the spread of the saman trees. The flamboyants ("flame of the forest", as they are sometimes called) are out, and the brazen



hogenvillia, defiant and conspicuous; and, as though in loyalty, the rose is there, struggling against the disadvantages of a growth of native splendour. There is a profusion of pattern and colour in every variety of palm, fern, flowering shrub or tree; the ground is carpeted with dust and arabesques of shade. The heat is sometimes suffocating, and yet if you hopefully ask whether it will be better when the rains come, you will receive the reply, "No, not better; just different".

To the north of the capital among the densely wooded hills lies Maraval. To get at it you must take the "saddle" road. By some freak of obstinacy this Franco-Spanish village has kept its integrity. Here old negresses still wear their bright coloured panier skirts of the last century for going to church on Sundays. They speak a patoi all of their own, and it is doubtful whether any Frenchman could understand them. They still eat "calaloo" for their midday meal, a kind of thick soup made of ochras and containing special lubricating qualities for the vocal cords. This recipe is said to have been brought with them from Africa where their tribal chieftains used it to loosen their speech before a palaver. These are the descendants of French slaves, and many of them still retain the culinary arts learned from their



late masters. What they can do with lobster or crab, fried or boiled plantains and fruit salads in which pawpaws, sapodilla, mango, pineapple, etc. play their subtle part, is a revelation. But, alas, this art is dying out with the present generation.

In Maraval, right opposite the seventeenth century Spanish church, lives an old Canadian rancher; his house is small, and orchids of every variety bloom around his veranda; nature puts its best foot forward for this old timer. His garden is full of flowers, cacti, and rare sea shells, and at the back, in the domain of his old retainer cook, are fruit trees of all kinds. Under lime and orange trees the poultry find their shade, while the rustle and cooing of pigeons comes from the eaves. He is a naturalist, as the presence of stuffed birds and grinning alligators in his house will confirm. The most beautiful of the birds in the island is the scarlet ibis, locally known as the flamingo; he is, of course, no more a flamingo than the local vulture is a "corbeau", or a banana is a "fig", or lunch is breakfast, these are merely samples of local misnomers. Trinidad has a large

A profusion of pattern





"King-of-the-woods" (one-quarter life size), (mot-mot). *Momotus bahamensis*

variety of birds which can only be touched upon lightly here; many of these are known by their French names. The mot-mot, or king-of-the-woods, is spectacular; also the honeysuckers, the rufus-tailed jacamars, the many hummingbirds and the trogon, which raises its young inside ants' nests which hang from trees, there being a sort of gentleman's agreement between this bird and the ants. Both yellow and red-bellied varieties of this bird are extremely handsome. The corn-bird or oriole is strikingly beautiful; he is bright yellow and black, and builds a hanging nest which is entered from the bottom. Many of these birds are so fantastic in colour and in shape (as for instance, the toucan, whose bill is as long as his body, the guacharo and the scissortail) that mere description serves but little purpose. Nearest to the North American robin is the bald-eyed thrush which is found all over the island. Another garden species is the mockingbird which varies from the one in the southern states but is just as good a mimic, and the sucrier, the little trusting friend of man which is found around

every house. Already mentioned is the "keskadee" whose name is a corruption of





Comad
1962



Comad
1962



French Creole house in Port of Spain

the French "qu'est-ce qu'il dit", a phrase which he utters all too frequently and emphatically, pelicans too can be seen anywhere along the coast, flying, usually, in formation like a patrol of police.

Mammals and reptiles are also plentiful. The howler monkey, the agouti, the armadillo and a small variety of deer are quite frequently met with in the jungle. There is also a small species of opossum and a kind of civet cat.

Heading the list of snakes is the coral-snake, who looks like a bead necklace as he lies sleeping in the grass; but woe to the luckless one who picks him up, for this snake is as deadly as he is beautiful. The safest way to see a bushmaster is from the outside of a case in a museum for he is aggressive and his bite is fatal. The huilla or boa constrictor, an inhabitant of the swamps, is usually harmless enough, although it would be a mistake to take liberties with him. Sharing the same terrain is the alligator. The stealthiest aggressor of the whole animal community is the largest of the bat family, "the vampire"; he will attack sleeping humans and animals at night. Fanning his victim

with his wings so as not to waken him, he will inflict a lengthy skin wound with his front teeth, which are set at an angle for that purpose. A number of blood vessels will thus be opened up and bleed freely. The vampire then laps up the blood wherever it collects, which proves that he is not a bloodsucker as is generally believed, nor does his appetite necessarily cause the death of his victim; however, the danger of these bats comes from the fact that a fair percentage of them have rabies.



Top left: — Rufus-tailed jacamar

Bottom left — Sucrier. *Coereba luteola* (Cab.)

DISTRIBUTION OF NATIONAL INCOME AND PURCHASING POWER

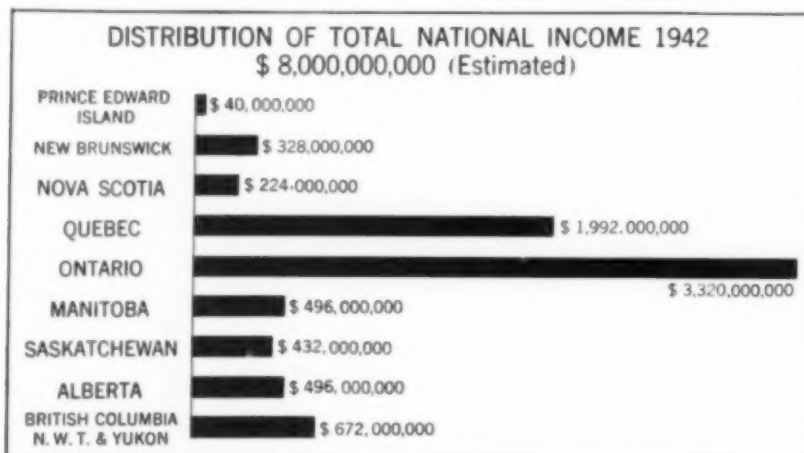
by C. M. SHORT*

CANADA'S national income in 1942 is estimated unofficially at about \$8,000,000,000. This is somewhat in excess of the official estimate, but the latter is admittedly on the conservative side. Of this amount at least half, or \$4,000,000,000, consists of payments to individuals in the form of non-agricultural salaries and wages, the remainder being the income of farmers and farm labour, returns to investors (dividends, interest and the repayment of outstanding debts), income of merchants, professional people, industrial enterprisers and the armed forces and allowances to dependants of the last-named.

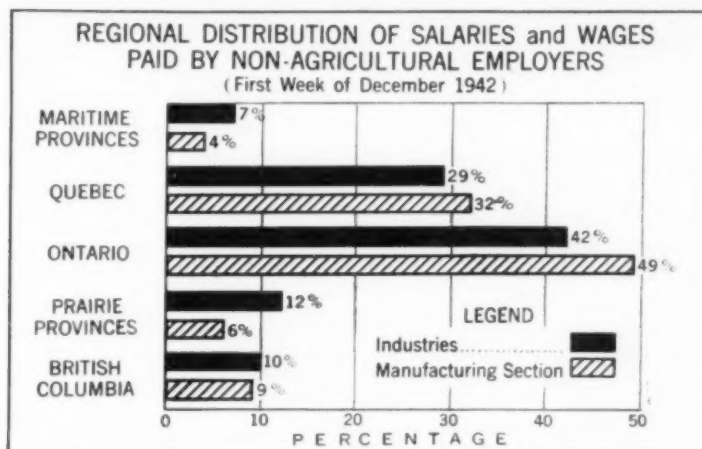
War activity of course dominates Canadian production and, as regards the source of income, has made itself especially felt in salaries and wages. About 62 per cent of all non-agricultural employees are engaged in manufacturing, and, in view of the fact that the higher wages paid are in that field, it is safe to assume that at least 70 per cent of industrial wages are paid to factory workers. Again, it is estimated on the basis of the data available that 70 per cent of present manufacturing wages is derived from war contracts and sub-contracts and the relative proportion of salaries is perhaps not dissimilar. A simple calculation will therefore show that nearly 50 per cent of all non-agricultural wages and salaries, and 25 per cent of the national income, is derived directly from war factories. To this must be added the

income of the enterprisers themselves, the return on investments in these plants and the income derived from that part of the primary production of fields, mines, forests and fisheries, and that from transportation, construction and personal services, which contribute to the war effort. When all is taken into account, it may be said that well over half—perhaps as much as two-thirds—of the national income is directly dependent on war activity.

How is this income distributed regionally? From what has been written above it may be concluded that the determining factor is the presence of war industries. These are located, it is true, across Canada, but by far the greater number are in the highly industrialized sections of Ontario and Quebec, with smaller groups in the Maritime Provinces, British Columbia and the Prairie Provinces. The percentage regional distribution of salaries and wages paid by non-agricultural employers reporting to the Dominion Bureau of Statistics for a sample week at the beginning of last December is as follows, the manufacturing section being shown in brackets: Ontario 42 (49), Quebec 29 (32), Prairie Provinces 12 (6), British Columbia 10 (9), and Maritime Provinces 7 (4). The wide spread between the two percentages in the case of the Prairie Provinces is due mainly to the wages paid by the transportation systems which constituted 24 per cent of their Canadian payroll.



*Supervisor, Statistical Research, the Canadian Bank of Commerce

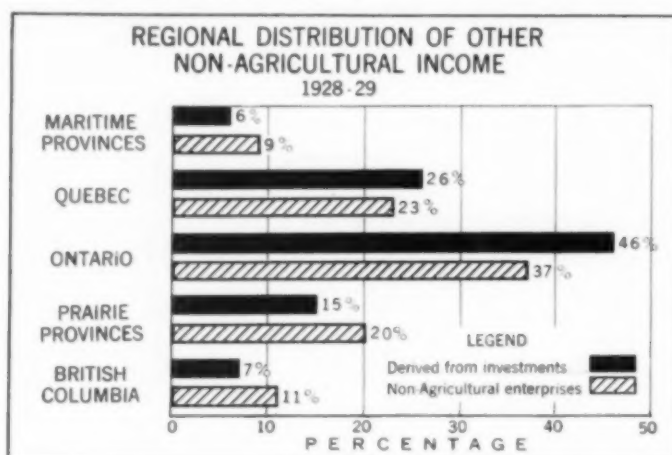


This distribution does not differ greatly from that existing during the prosperous period of 1928-29, as published in the Report of the Royal Commission on Dominion-Provincial Relations. The percentages for the Maritimes and British Columbia are virtually unchanged, but that for industrial wages in the Prairie Provinces fell from 17 per cent in 1928 to 15 per cent in 1936 and to 12 per cent in 1942. It should be remembered, however, that 1928 was a particularly prosperous year for the West, and that the Western payrolls of the railway companies were correspondingly high. There is a slight change in the percentage for the central provinces, Ontario's ratio for manufacturing salaries and wages falling from 52 to 49 and Quebec's rising from 29 to 32, while the ratios for the total industrial payroll were almost unchanged. These figures may be taken to indicate that the war has stimulated manufacturing activity across Canada, for the rise in the total payroll has been fairly uniform in all regions; that in spite of greatly increased war output Ontario's ratio has declined slightly because of the curtailment of the output of consumers' durable goods (automobiles, refrigerators, etc.) manufactured largely in that province; that Quebec's ratio has risen on account of the rise of new war industries; and, lastly, that the improvement of farm purchasing power in the Prairie Provinces has not yet been reflected in a return of industrial prosperity in that area.

It would be difficult to arrive at the present distribution of other non-agricultural income, but it is almost certain that there has been very little change in most of the ratios existing in 1928-29. At that time the regional percentages of

income derived from investments were as follows, those from non-agricultural enterprises (employers and those engaged on their own account) being bracketed: Ontario 46 (37), Quebec 26 (23), Prairie Provinces 15 (20), British Columbia 7 (11), and Maritime Provinces 6 (9). The ratios for 1936 showed little change, except a decline to 13 (17) per cent for the Prairie Provinces and corresponding increases for Ontario and the Maritimes.

Agricultural income may be calculated in two ways. There is, first, the cash return from the sale of farm products and, next, the net income in cash and kind less depreciation of buildings and equipment. For the purpose of this discussion farm wages are included in this income. In the prosperous year 1928 the net income was 89 per cent of cash sales for the whole of Canada, considerably exceeding sales in the Maritime Provinces and slightly above those in Quebec. In Ontario and British Columbia it represented 91 per cent of cash sales and in the Prairie Provinces 82 per cent. At the low of the depression in 1932 the proportion for Canada fell to 50 per cent but by 1937 it had recovered to 79 per cent. In view of the higher operating costs to-day it seems likely that the present proportion is between 70 and 75 per cent. Even so, by this calculation the official estimate of \$1,083,100,000 for sales of farm products in 1942, compared with \$1,058,800,000 in 1928, would bring the present net income of farmers and farm labour (exclusive of Government subsidies) to over 80 per cent of the 1928 peak, and their purchasing power within even closer range, since both farm costs and the general cost of living are now slightly below those prevailing in the earlier year. The following table shows the provincial



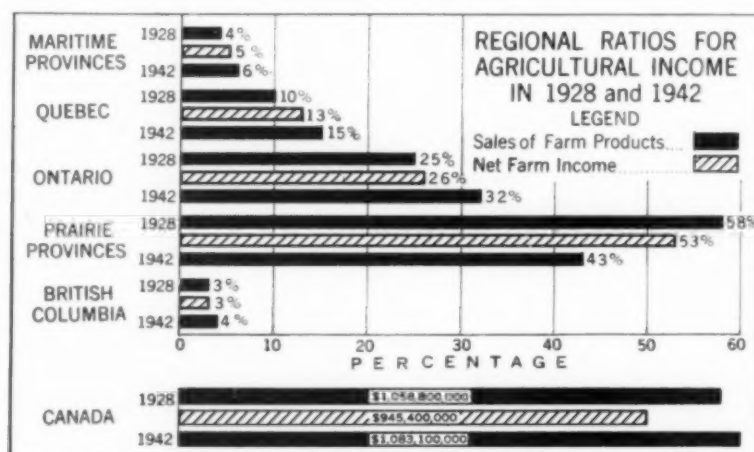
ratios for agricultural income in 1928 and to-day:

	1928		1942
	Sales of Farm Products	Net Farm Income	Sales of Farm Products
Prince Edward Island	1	1	1
Nova Scotia	2	2	2 1/2
New Brunswick	1	2	2 1/2
Maritime Provinces	4	5	6
Quebec	10	13	15
Ontario	25	26	32
Manitoba	8	6	9
Saskatchewan	30	28	17
Alberta	20	19	17
Prairie Provinces	58	53	43
British Columbia	3	3	4
Canada (millions of dollars)	1,058.8	945.4	1,083.1

It will be seen from the above that the older provinces of Ontario and Quebec combined have now passed the Prairie Provinces as regards farm sales and in all probability to a greater degree as regards net income. The reason is the rising importance of live stock and dairy products in the agricultural economy, the main

sources of farm revenue in central Canada.

A preliminary estimate has been made of the distribution of total national income for 1940. Applying this to the figure of \$8,000,000,000 for 1942 we obtain the following approximations in millions of dollars: Maritime Provinces \$592,000,000 (Prince Edward Island \$40,000,000, Nova Scotia \$328,000,000, New Brunswick \$224,000,000), Quebec \$1,992,000,000, Ontario \$3,320,000,000, Prairie Provinces \$1,424,000,000 (Manitoba \$496,000,000, Saskatchewan \$432,000,000, Alberta \$496,000,000), and British Columbia, North West Territories and Yukon \$672,000,000. Against this income should be offset taxes, including the Dominion levies which amounted to \$1,944,000,000 in 1942 and an estimate of about \$500,000,000 for provincial and municipal taxes. In recent years, with taxation centred increasingly in the Dominion authority, the incidence has come into greater conformity with income, so that the distribution of the remaining net purchasing power, estimated at \$5,556,000,000 for 1942 has not been materially affected.





BATTLING NATURE'S BLITZKRIEG

How Telephone Companies Meet the Challenge of Sleet

by H. G. OWEN

BECAUSE of storm damage near Smiths Falls, your call will be delayed.

If you have occasion to telephone out of town frequently, you may have heard that phrase from your long distance operator more than once in the past few months. As every one knows, it has been a tough winter — and not only for Hitler.

Heaviest in the past twenty years was the storm which swept the New Year in for southern Quebec and eastern Ontario. Sleet blanketed the triangle bounded by Ottawa, Montreal and Brockville. Imagine an area 10,000 square miles in extent, in which every bit of telephone line was sheathed in ice weighing more than three tons on every pole of a 40-wire line! That weight is four times the "heavy storm load" for which even first-class long distance lines are designed.

In this area, there are 900 miles of inter-city telephone lines carrying "open wire" — wire not enclosed in lead-sheathed cable. On these lines, about 1,200 poles went down completely, many of them snapped in two by the tremendous strain of ice and wind. Even those still standing suffered from the stress, so that cross-arms were twisted and wires were broken or stretched and sagging. In some sections the wire was stretched out so thin that it could not be re-used.

This area also contains 52 Bell Telephone exchanges with 61,000 poles in urban and rural lines, carrying thousands of miles of wire and cables. Even in the cities, cables were smashed by falling poles and trees, or damaged by contact with broken power wires, which burnt holes in the lead sheath, permitting moisture to enter and cause short circuits.

This was a wartime emergency. On the one hand, there was a crying necessity for restoring service swiftly for the benefit of army camps, airports, munition plants, and other vital points. On the other hand, there were serious shortages of critical materials and experienced men.

Not allowed to maintain the normal peacetime stocks of reserve equipment because such stocks would tie up critical war materials, the Northern Electric Company had to work night and day to produce the necessary supplies for reconstruction. Hundreds of poles, tons of regular line wire, millions of feet of insulated wire for temporary repairs were rushed over a crippled transportation system to a hundred different locations.

In addition to 1,500 men on war service, The Bell Telephone Company had also been called upon to provide men experienced in communications work for service in many parts of the continent. For example, five gangs had found themselves far from home territory, working with crews from American Bell companies to aid the U.S. Signal Corps in completing the Alcan Highway telephone line.

In the head office of The Bell Telephone Company at Montreal, a special "storm headquarters" was set up to organize the campaign to restore service. As fast as the lines could be patrolled by local maintenance men, reports were rushed to this centre. All through New Year's Day and the following days, engineers sifted and studied these reports, planning the quickest method of meeting the crisis.

Fortunately, the new Montreal-Ottawa underground cable had just been completed. Although it had not been tested or equipped with repeaters, it was hurriedly placed in service, making available 48 circuits on what is perhaps the most important long distance route in Canada. Most of the service between Montreal and Toronto and other points in Ontario was, for several weeks, carried over circuits through the State of New York.

Beginning on New Year's Eve itself, some 75 gangs of Bell Telephone workers from as far north as Quebec City and as far west as London converged upon the stricken area to assist the local repair crews. Linemen gave up their holiday, donned windbreakers, mitts and snowshoes and sallied forth in sub-zero weather. They set out to tackle the essential circuits first, stringing insulated wire along fence posts and through ditches — anywhere to patch up breaks temporarily. Roads were snow-bound, and if you have ever tried to persuade a farmer to hitch up a horse and sleigh to battle drifts on New Year's Day, you will appreciate some of the minor problems encountered. Because stores and even hotels were closed over the holiday, some gangs had to subsist on chocolate bars and had difficulty in finding a place to sleep.

An unusually long cold spell followed the storm, and ice clung to the wires for nearly two weeks, delaying many repairs. Lesser sleet storms struck again in March, temporarily disconnecting a number of the restored circuits. Many rural lines were so deeply buried under drifts that subscribers had to wait for spring when the lines could be rebuilt completely.

It is worth noting that, despite all the rush and stress, and working in the midst of broken plant and slippery ice, not a man suffered from serious accident.

Similarly, smaller telephone companies — there are nearly 900 of them in Quebec and Ontario — did not lie down and bemoan their lot, although the storm left some without a single telephone in service. Equipping a truck, one company's maintenance man drove around from farm to farm until he had all the men he could muster. Commandeering some poles, they set to work and reconstructed the entire system within a month. By the first of March, all save a few isolated subscribers in the back country had been reconnected.

Although the storm added greatly to the wartime telephone problem, the story of its conquest illustrates how well-equipped and experienced the telephone companies are, even in peaceful Canada, to encounter the crises which may yet prove unavoidable to a nation at war.

EDITOR'S NOTE-BOOK

Contributors

Herbert C. Lanks, photographer-author of several books on Latin America, contributes from first-hand knowledge a striking record of the development of the Pan American Highway. Mr. Lanks received his Master's degree in Spanish literature from the University of Pennsylvania and subsequently pursued graduate studies at various universities, including the University of Mexico. Thus equipped, he was among the first to pioneer over the incomplete Highway down into Mexico in 1932. Each subsequent year Mr. Lanks has pushed his way further south into Mexico, Central America, and South America, gathering material for new publications and lectures and producing colour and sound-colour motion picture films for the United States Government. Mr. Lanks' recent book *By Pan American Highway through South America* was reviewed in the October 1942 issue of this Journal.

Edmund Robert Yarham was educated at the City of Norwich School, Norwich, and the Borough College (University of London). Holder of the Silver Medal of the Royal Geographical Society for the Cambridge University Certificate Examination, he is a Fellow of the R. G. S. For the past fifteen years Mr. Yarham has travelled and lectured, and broadcast for the B.B.C. on geographical subjects, and contributed to the chief geographical journals and magazines in Great Britain.

Joseph Wechsberg, writer of "Alaska, Spring-board of Attack", is a native of Czechoslovakia. A graduate of Prague University, he pursued studies at Vienna Conservatory, the Paris Sorbonne, the Universities of Zurich and Basel. For the past fifteen years, the author has travelled extensively in Africa, the Far East, the Dutch Indies, the South Seas, the West Indies, the Americas and Canada. This experience combined with that gained as correspondent for many papers, provides a particularly useful background for the writing of this article.

Captain Conrad T. O'Brien-French (Marquis de Cashelthomond) combines the products of his skill as writer, sketcher and photographer to provide our readers with an intriguing picture of Trinidad following first-hand study of some months made while engaged on official business from which he has but recently returned. Born in London, England, the author has travelled all his life with note-book, camera and sketch-book. He has ridden the Canadian Prairies with the Royal N.W. Mounted Police (from which he left to serve in the Great War, 1914-1919); a member of the Alpine Club, he has crossed the Arctic, Finland and Lapland on skis; climbed the Himalayas, Alps, Pyrenees, etc.; crossed Russia and Siberia to Harbin; visited the Islands of the Mediterranean and those of the Caribbean, Central America, North Africa, etc.

Explanatory Note—"Canada's Aircraft Industry", March, 1942.

A certain amount of controversy has arisen with respect to an article—"Canada's Aircraft Industry"—published in the March, 1942, issue of the Journal. Mr. R. P. Bell, the author, feels that it is advisable to settle the matter permanently, and has

therefore provided a clear explanation concerning the points under discussion which we publish herewith for the information of our readers.

In the first place, a specific accusation of inaccuracy has been made, it being charged that the photograph of the *Silver Dart* was not taken on the day of its initial flight. Mr. Bell replies to this criticism as follows:—

"The caption beneath the picture does not say that it was. Mr. McCurdy was well aware of the fact that this picture was not a picture of the first flight and he himself approved the caption as being strictly and absolutely accurate. I understand that there was a picture taken on the day of the first flight, but not as good a one as this which was reproduced for the article in question."

In the second place, it has been suggested that the article is incorrect in that it names Baddeck rather than Halifax as the place where the Aerial Experiment Association was organized on October 1st, 1907. Mr. J. A. D. McCurdy, one of the original founders of the A. E. A., who assisted Mr. Bell by supplying information relative to this subject, provides the following explanation:—

"I have this afternoon visited the National Research Council and have looked into the official records of the Aerial Experiment Association, known as the Bulletins of the A. E. A., which records were prepared and edited by Dr. Alexander Graham Bell as editor-in-chief. I am quoting now from extracts taken from these records:—

"Minutes of the Meetings of the Aerial Experiment Association, 1907, Oct. 1, Tues.

"Messrs. Alexander Graham Bell, Glenn H. Curtiss, F. W. Baldwin, J. A. D. McCurdy and T. Selfridge, 1st Lieut. U.S.F.A., met together in the Halifax Hotel, Halifax, N.S. at 11.00 a.m., Tuesday, Oct. 1, 1907. They were presented with the following Articles of Agreement which they had signed the previous day before a Notary Public, whose signature was duly authenticated by the American Consul General at Halifax, David H. Wilder.

"The Articles of Agreement were headed: 'Agreement to Organize the Aerial Experiment Association'.

"On page 2 of the Agreement: 'We agree that the A. E. A. shall be organized on the 1st October, 1907'.

"On page 4 of the Agreement: 'We agree that the headquarters of the A.E.A. shall be at Beinn Bhreagh near Baddeck, N.S., and that on or before January 1, 1908, the headquarters of the Association shall be moved to some place yet to be determined within the limits of the U.S.'.

"WITNESSED our hands and seals at Halifax, N.S., the 30th day of September A.D. 1907.

(signed) (signed) Alexander Graham Bell

Wm. L. Payzant (signed) Glenn H. Curtiss

(signed) F. W. Baldwin

Notary Public (signed) J. A. D. McCurdy

(signed) T. Selfridge, 1st U.S.F.A.

"Authenticated by David F. Wilder, Consul General of the U. S. A., September 30, 1907."

"According to Bulletin XXXIX, issued April 12, 1909, with Appendix A, the Aerial Experiment Association dissolved on March 31, 1909, by Resolution of the Board. Those present were:

(Continued on page IX)

THE GEOGRAPHICAL QUIZ PAGE

*A service designed primarily for the use
of teacher and student*

- I. When did Prince Edward Island first receive the name by which we know it to-day? Not until 1798, when it was so called by its own local assembly as a compliment to Prince Edward, Duke of Kent (later the father of Queen Victoria). Champlain had called the island Isle St. Jean in honour of St. John the Baptist, while its original inhabitants, the Micmac Indians, picturesquely described it as *Abegweit*—"the home cradled on the waves".
- II. Of what nationality were the first settlers in Prince Edward Island? They were Frenchmen, attracted by the wonderful fisheries.
- III. When was the first permanent colony established here? It was founded in 1720, when Denys de La Ronde and Sieur de Gotteville de Bellisle chose the southwest side of what is now Charlottetown harbour as the site of Port La Joie — the centre of government during the period of French control. However, it was not until the French Government decided to move a large number of Acadians from Nova Scotia that settlement began to progress rapidly.
- IV. What happened to Prince Edward Island after the Peace of Paris, 1763? It was divided into 67 townships of 20,000 acres each, and in 1767 these were handed over to court favourites in England. This resulted in endless conflict between the tenants on the Island and their landlords over the sea. The problem was not solved until 1873 when Prince Edward Island entered Canadian Confederation; then the landlords were forced to sell their estates to the Government, which resold subdivisions to the tenants.
- V. Trace the development of government in Prince Edward Island, enlarging on the following brief outline: When Isle St. Jean first became a British possession (1763), it was placed under the Government of Nova Scotia, but in 1769 was made a separate colony. A bitter struggle for responsible government was not successful in ending direct British control until 1851. In September of 1864, the Confederation Fathers met for the first time at Charlottetown ("The Cradle of Confederation") to discuss the possibility of a legislative union of the Maritime Provinces. This was the original of a series of three conferences which resulted in 1867 in Confederation. Strangely enough, Prince Edward Island remained aloof till 1873, since when it has been self-governing locally within the terms of the British North America Act.
- VI. How large is Prince Edward Island? The smallest of Canada's provinces is 140 miles long and from 4 to 40 miles wide.
- VII. What are two or three noteworthy physical geographical features? The Island is extremely irregular in shape, and its deep inlets and tidal streams divide it into three almost equal parts. The land nowhere rises to a height of more than 500 feet, but there are many hills in the central portion. The north shore is a long series of beaches of fine sand, and on the south, low cliffs of crumbling red sandstone face the strait.
- VIII. What is the main industry of the Island? Mixed farming; fertile soil and adequate rainfall combine to produce bountiful crops, and, owing to the iron oxides in the rich red soil, all the foods raised excel in both flavour and nourishment value. As no part of Prince Edward Island is more than 20 miles from the sea, the iodine content of the foods from its farms is always high. In 1941, there were 494,100 acres of field crops under cultivation — chiefly potatoes (for which the Island is justly famed), hay, clover, and oats — valued at \$9,484,000. Not only man benefits from the rare nutritional value of her various crops, however, for it was early discovered that cattle would thrive here, and cheese factories and creameries were established as early as 1892. Fox farming, too, provides substantial annual returns; in fact, this province leads the other eight in the yearly production of silver-fox skins and her pelts have gained an international reputation.
- IX. The sea first attracted settlers to Prince Edward Island. Is it still an important source of revenue? Yes — the waters around this province are amongst the most valuable fisheries of America. The lobster fisheries are very profitable and have been responsible for the growth of a number of lobster canneries on the Island. Other fish caught include herring, cod, sardines, mackerel, haddock, smelts and salmon, and there are excellent oyster beds in Richmond Bay and elsewhere. The value of the products of the province's fisheries in 1939 was \$950,412, and in 1940, \$714,870., the decrease being due rather to lowered prices than to smaller catches.
- X. What proportion of Prince Edward Island is composed of forested land? About $\frac{1}{2}$; total accessible standing timber in this province measures approximately 118 million cubic feet, and is mostly composed of spruce, balsam, yellow birch, maple and pine. The value of products of woods operations on the Island during 1939 was slightly over \$551,000.
- XI. After locating the following Island names on a map, try to determine their origins before referring to the information provided below:
 - (a) TIGNISH — corruption of a Micmac Indian word, *mtagunich*, meaning "a paddle". This is probably an allusion to the outline of the river and pond.
 - (b) CHARLOTTETOWN — named in honour of Queen Charlotte, consort of King George III of England.
 - (c) SOURIS — French for *mouse*; probably plagues of mice were experienced here in former years.
 - (d) PORT BORDEN — so named in 1916 in honour of Sir Robert Borden, Prime Minister of Canada from 1911 to 1920.
 - (e) TRACADIE — corruption of the Micmac Indian name, *Tulakadik*, meaning "camping ground".

*See *Place Names in Canada* by G. H. Armstrong, MacMillan, 1940.

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(Continued from page VII)

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"It would, therefore, appear that the following is
correct. The agreement to form an association
was decided upon at Baddeck, and a memo
evidencing such agreement was prepared at Baddeck.
The parties met at Halifax where the memo
was attested to or acknowledged before a Notary
Public and authenticated by the American Consul.

"From the foregoing, it will appear that the
Association was conceived and agreed upon at
Baddeck and the acknowledgment before the
Notary Public, and authenticated by the American
Consul, merely gave more formal status to the
agreement which had been entered into at Bad-
deck.

"Inasmuch as the five members of the A. E. A.
agreed among themselves on what basis they should
associate together, and a covering memo was pre-
pared at Baddeck, I submit, therefore, that the
attestation of such an agreement which took place
in Halifax does not change in any way the origin
of its birth. I understand from Legal Counsel that
a signed document is only evidence of an arrange-
ment which has been arrived at, so, to be perfectly
clear, we might say that the Association was
agreed to by the partners at Baddeck where it
originated, but the signatures thereto were formally
attested at Halifax on September 30th, 1907, and
by Resolution the Association came into effect on
the following date, namely, October 1st, 1907."

It is to be hoped that the above will serve to
clarify the questions which have been raised, and
to clear the author from charges of inaccuracy.